Mamuzic, Zlatko

topologiques classiques; particulièrement il établit diverses conditions nécessaires et suffisantes pour que cette topologie soit transitive c'est-à-dire vérifie l'axiome α ($\bar{\bar{F}}=\bar{F}$). La conception de l'A. englobe comme cas particuliers les espaces à écart abstrait envisagés par divers auteurs (G. Kurepa, M. Fréchet, J. Colmez, A. Appert). — L'A. généralise les espaces $e[M]$ de Kurepa [C. R. Acad. Sci. Paris 203 (1936), 1049–1052] en introduisant les espaces $E(M_{\mathcal{V}})$ définie comme étant les espaces E topologisés par (C) comme plus haut et où de plus M est un espace $(\mathcal{V})$ et où, pour chaque point $a \in E$, la famille $\mathcal{F}_a$ est, dans l'espace M, la famille des voisinages de $f(a, a)$. L'A. démontre que dans les espaces $E(M_{\mathcal{V}})$ le critère (C) peut être remplacé par le critère équivalent O^3 suivant dû à G. Kurepa (loc. cit.): O^3. Pour tout point $a \in E$ et tout ensemble $F \subset E$, on a: (a contigu à F) $\rightleftharpoons$ ($f(a, a)$ contigu a $f(a, F)$), où on pose: $f(a, F)$ = ensemble des $f(a, x)$ pour $x \in F$.

A. Appert (Angers).

2/2

GMJ

Mamuzic, Z.

Various topologic (uniform) structures defined on the E set by the application of f (ExE) M in a (whatever) ordered M set. p. 185.

CROATICA CHEMICA ACTA. (Hrvatsko kemijsko drustvo, Sveucilist.e u Zagrebu i Hrvatsko prirodoslovno drustvo) Zagreb, Yugoslavia. Vol. 7, no. 3/4, 1955

Monthly list of East European Accessions (EEAT) LC, Vol. 8, no. 8, Aug. 1959

Uncl.

MAMUZIC, Zlatko (Beograd, ul. Zeceviceva 7)

"Linear algebra, Analytic geometry, Polynomials" by D.S. Mitrionovic and D. Mihailovic. Reviewed by Z. Mamuzic. Ves mat fiz Srb no.11:217-219 '59.

1. Sekretar Uredivackog odbora, "Vesnik Drustva matematicara i fizicara Narodne Republike Srbije."

MAMUZIC, Zlatko (Beograd, ul. Zeceviceva 7)

"Collection of mathematical problems with appendixes and numerical tables, Vol.3" by Dr. D.S. Mitrinovic, J. Ulcar, and Dr. V. Devide. Reviewed by Z. Mamuzic. Ves mat fiz Srb no.12:181-182 '60.

1. Sekretar Uredivackog odbora, "Vesnik Drustva matematicara i fizicara Narodne Republike Srbije."

MAMUZIC, Z. P.

Abstract difference and uniform structures. Bul sc Youg 8 no. 1/2: 19 F-Ap '63.

1. Masinski fakultet, Univerzitet, Beograd.

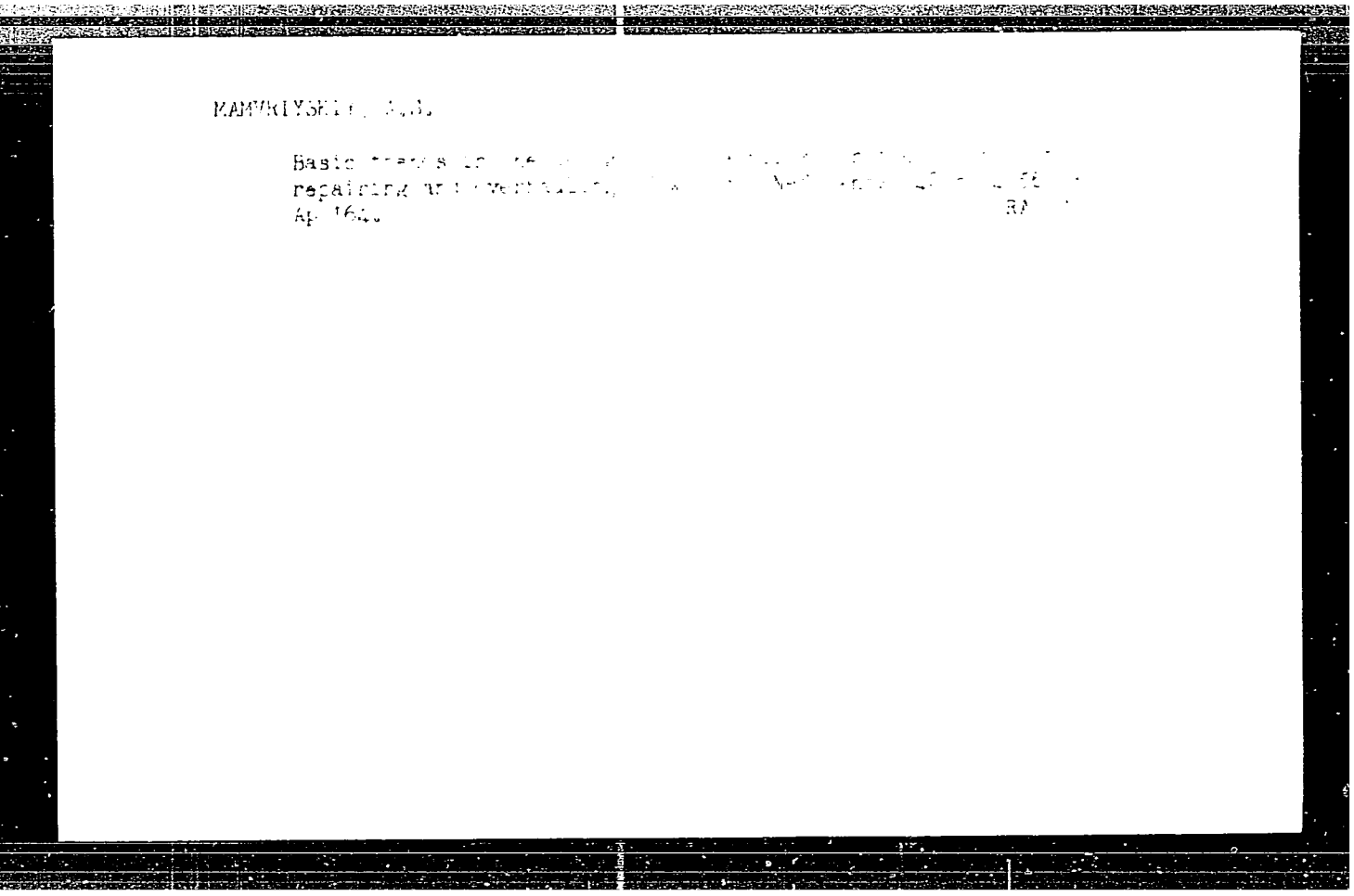
MAMUZIC, Z.

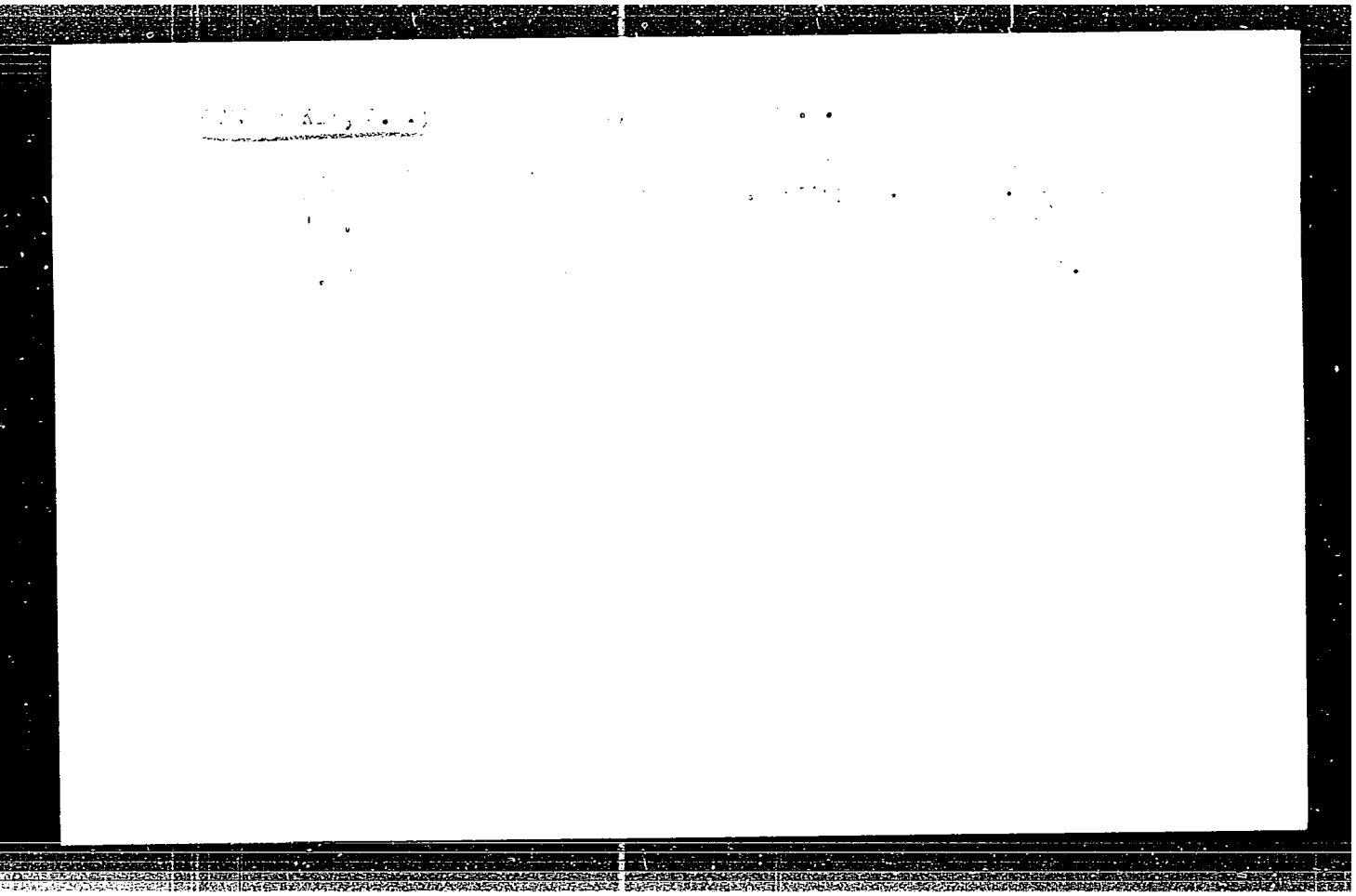
Solution of a problem related to e'spaces. In French. p. 95.
(Glasik Matematicko-fizicki I astronomski, Vol. 11, No. 2, 1956, Zagrab, Yugoslovia)

SO: Monthly List of East European Accessions (EEAL) Lc. Vol. 6, No. 8, Aug 1957. Uncl.

MANDIĆ, Zlatko P.

Some remarks on the continuous applications of neighbor-
hood spaces. Publ Inst math SANU 3:131-137 '63.





TOBUNOV, E.M.; MAMVRITSKIY, A.S.; DZHABRAILOVA, A.V.

Efficiency of corrosion inhibitors for carrying ou the acidization of H-p wells. Gaz. delo no.10:18-20 '65.
(MIRA 18:12)

1. Groznenskiy neftyanoy nauchno-issledovatel'skiy institut.
Submitted January 8, 1965.

MAMYAN, A.N.

Potential shift in the separation of copper from cupric sulfate in presence of acetylene. Nauch.trudy Erev.un. no.53:127-135 '56.
(MLRA 9:10)

1.Kafedra fizicheskoy khimii.
(Copper--Electrometallurgy)

MAMYAN, A.N.

Effect of the composition of the absorbed complex on soil swelling. Nauch. trudy Erev. un. 59:171-177 '57. (MIRA 11:8)
(Soil physics)

CHALTYKYAN, O.A.; MAMYAN, A.N.; MOVSESYAN, R.V.

Catalytic action of copper iodide on the oxidation of oxalate ion by perfulfate ion. Nauch. trudy Erev. un. 60:135-142 '57. (MIRA 11:8)

1.Kafedra fizicheskoy khimii Yerevanskogo gosudarstvennogo universiteta.
(Copper iodide) (Oxalates) (Peroxidisulfates)

MAMYAN, B.A., kand.sel'skokhozyaystvennykh nauk

Work results in the improvement of swine breeds and increase of their productivity in the Armenian S.S.R. Trudy Arm. nauch.-issl. inst.zhiv. i vet. 4:11-21 '60. (MIRA 15:5)
(Armenia--Swine breeding)

ANUFRIYEV, G.S.; MAMYRIN, B.A.

Transit-time mass spectrometer with stroboscopic transformation of the output signal. Prib. i tekh. eksp. 9 no.5:150-157 S-O '64. (MIRA 17:12)

1. Fiziko-tekhnicheskiy institut AN SSSR.

POPOVA, L.; BUSH, G., inzh.; BARANOVA, P.; KUZNETSOV, P.; MER, N.; LADYGIN, A.; PREOBRAZHENSKIY, Yu.; STEPANOV, V.; BELINSKENE, A.; SHUBIN, V.; SEROV, K., MAMYAN, K.

From speeches at a conference in Riga. Izobr.i rats. no.4:6-9 Ap '62. (MIRA 15:4)

1. Uchenyy sekretar' nauchno-metodicheskogo soveta po rabote narodnykh universitetov kul'tury Pravleniya Vsesoyuznogo obshchestva po rasprostraneniyu politicheskikh i nauchnykh znaniy (for Popov). 2. Rizhskiy myasokonservnyy kombinat (for Bush). 3. Predsedatel' L'vovskogo dorozhnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Baranova). 4. Prorektor universiteta tekhnicheskogo tvorchestva Amurskoy oblasti (for Kuznetsov). 5. Glavnyy inzh. lokomotivnogo depo Moskva-Sortirovochnaya, zamestitel' rektora narodnogo universiteta (for Mer). 6. Predsedatel' soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov Novo-Kramatorskogo mashinostroitel'nogo zavoda (for Ladygin). 7. Predsedatel' Litovskogo respublikanskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Belinskene). 8. Zamestitel' dekana universiteta tekhnicheskogo tvorchestva pri Leningradskom Dvortse kul'tury imeni Kirova (for

(Continued on next card)

POPOVA, L. —— (Continued) Card 2.

Shubin). 9. Obshchestvennyy rektor universiteta novoy tekhniki pri Vsesoyuznom zaochnom institute inzhenerov transporta, Moskva (for Serov). 10. Obshchestvennyy direktor Kirovakanskogo instituta tekhnicheskogo tvorchestva molodykh ratsionalizatorov (for Mamyan). 11. Obshchestvennyy direktor Kiyevskogo universiteta po povysheniyu tekhnicheskikh znaniy izobretateley i ratsionalizatorov (for Stepanov). 12. Obshchestvennyy rukovoditel' Bashkirskogo instituta novatorov stroitel'noy industrii (for Preobrazhenskiy).
(Riga—Technical education—Congresses)

L 23502-66 EWA(h)/EWP(k)/EWT(m)/T/EWA(d)/EWP(e)/EWP(w)/EWP(t) IJP(c) WH/WW/DJ/
ACC NR: AP6009611 (A) SOURCE CODE: UR/0369/66/002/001/0084/0088
MJW/JD/GG

AUTHOR: Artamonov, A. Ya.; Mamykin, E. T.

ORG: Institute of the Science of Materials, AN Ukr SSR, Kiev (Institut problem materialovedeniya AN Ukr SSR)

TITLE: Interaction of materials with lubricants in the process of friction

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 1, 1966, 84-88

TOPIC TAGS: lubrication, lubricating oil, film lubrication, antifriction material, cermet, porosity

ABSTRACT: A study has been made to improve the capacitor method of measurement for the oil film thickness between rubbing surfaces and to determine the causes of the break down of this film in friction couples involving porous cermets and solid materials. The tests were made on an MT-3 machine described and diagrammed in the original article. SU brand oil was used as the lubricant. Cermets from APZhMa brand iron powder, having 10—30% porosity, sintered in dry hydrogen at 1150 C were tested. The solid materials (B83 babitt, OF7 bronze, and steel 30) were tested for comparison. It was found that the behavior of the

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ACC NR: AP6009611

lubricant in the clearance space between the rubbing surfaces depends not so much on the method of lubricant feeding to the friction zone as on the condition of the surface layer formed in the process of friction. In view of the different meltability and different chemical interaction of the lubricant with surfaces of different chemical composition, the nature of the material of the friction couple is of particular importance. Porosity substantially improves lubrication of the rubbing surfaces. However, in the case of forced feed of the lubricant into the clearance space, a too high initial porosity has a detrimental effect. In such a case, a material with 10—15% porosity has optimum properties. Orig. art has: 6 figures. [SM]

SUB CODE: 11/ SUBM DATE: 15Oct64/ ORIG REF: 003/

Card 2/2

L 11424-66 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD/WW/JG/DJ/

ACC NR: AP6002114 WH SOURCE CODE: UR/0369/65/001/006/0670/0674

91
89
B

AUTHOR: Fedorchenko, I. M.; Draygor, D. A. (deceased); Mamykin, E. T.

ORG: Institute of Materials Science Problems, AN UkrSSR, Kiev (Institut problem materialovedeniya AN Ukr SSR)

TITLE: Wearing in of iron-base cermet materials 16 27 16,14 18

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 6, 1965, 670-674

TOPIC TAGS: iron, aluminum, zinc sulfide, oleic acid, antifriction material, lubricant additive, cermet wear material, boron compound

ABSTRACT: The effect of iron and aluminum organosols, boron nitride, zinc sulfide, and oleic acid as active additives to lubricants on the initial period of operation of friction couples was studied on samples of 2FP iron-base antifriction material (containing 4% ZnS and 1.5% graphite). The samples had a ferrite-pearlite structure. The additives were found to improve the operation of the friction couple considerably during the wearing-in period. They make it possible to carry out the wearing in of the couple at high initial specific pressures, and if the lubrication system is reliable, they protect the rubbing surfaces from gripping. A change in the content of additive in the lubricant

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ACC NR: AP6002114

substantially alters the qualitative characteristics of the process. Thus, the additive content which decreases the wear of an antifriction bushing most effectively and the minimum friction coefficient are observed at a content which gives the longest wearing-in period. A composite additive (zinc sulfide + oleic acid) has been obtained which improves the performance of a friction couple during the initial period. Orig. art. has: 1 figure and 1 table.

SUB CODE: 11 / SUBM DATE: 21Nov64

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Card 2/2

DANDERS, Ya.; YATSEVICHUS, I. [Jacevicius, I.]; GOL'DENBERG, A.; KHARIN, B., inzh. (Leningrad); MOVA, N., inzh.; VINNIKOV, F. (Gomel'); MAMYKIN, I. (Gomel'); BENDERSKIY, A., starshiy inzh. (pos. Igra, Udmurtskoy ASSR); CHERTETSOV, V.; OSIPOV, I.; SIROTININ, M.I.

Exchange of news and experience. Izobr.i rats. no.4:25-26 Ap '62. (MIRA 15:4)

1. Sekretar' Respublikanskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorv, g. Riga (for Danders). 2. Glavnyy inzh. mezhdugorodnoy telefonnoy stantsii, g. Vil'nyus (for Yatsevichus). 3. Predsedatel' oblastnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov g. Ufa (for Gol'denberg). 4. Krayevoy sovet Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov, g. Krasnodar (for Mova). 5. Igrinskiy lespromkhoz kombinata "Udmurtles", (for Benderskiy). 6. Predsedatel' Krasnoyarskogo krayevogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Sirotinin).
(Technological innovations)

L 07504-67

ACC NR: AP6019558 (A) SOURCE CODE: UR/0416/66/000/001/0072/0076

AUTHOR: Mamykin, N. (Lt. Co.. of technical corps)

19
13

ORG: none

TITLE: All-army inspection of pipelaying subunits

SOURCE: Tyl i snabzh sov vooruzh sil, no. 1, 1966, 72-76

TOPIC TAGS: pipeline, military engineering

ABSTRACT: This article describes the preparation for and the conduction of an inspection of military pipe-laying subunits. The results of the inspection revealed that all subunits that participated in the inspection were well prepared. The winners of the inspection and their awards, which ranged from a challenge cup, certificate, and money for first place to certificates for second and third place, are given. Now the personnel of the pipe-laying subunits must not only maintain the results achieved and eliminate the shortcomings that were found, but they must reach even higher indexes in the next inspection which is planned for 1967. During the period of preparation for the next inspection they will have to achieve a further increase in the rate of laying pipelines and increasing their productivity, study and master new equipment, improve methods of laying pipelines in contaminated areas and under complex conditions, and to increase the reliability of the work of field pipelines. The preparation of the next

Card 1/2

ACC NR: AP6019558

inspection should appreciably increase the technical readiness of pipeline transportation and secure the exemplary activity of the pipe-laying subunits. Orig. art. has: 2 figures.

SUB CODE: 15,13/ SUBM DATE: none

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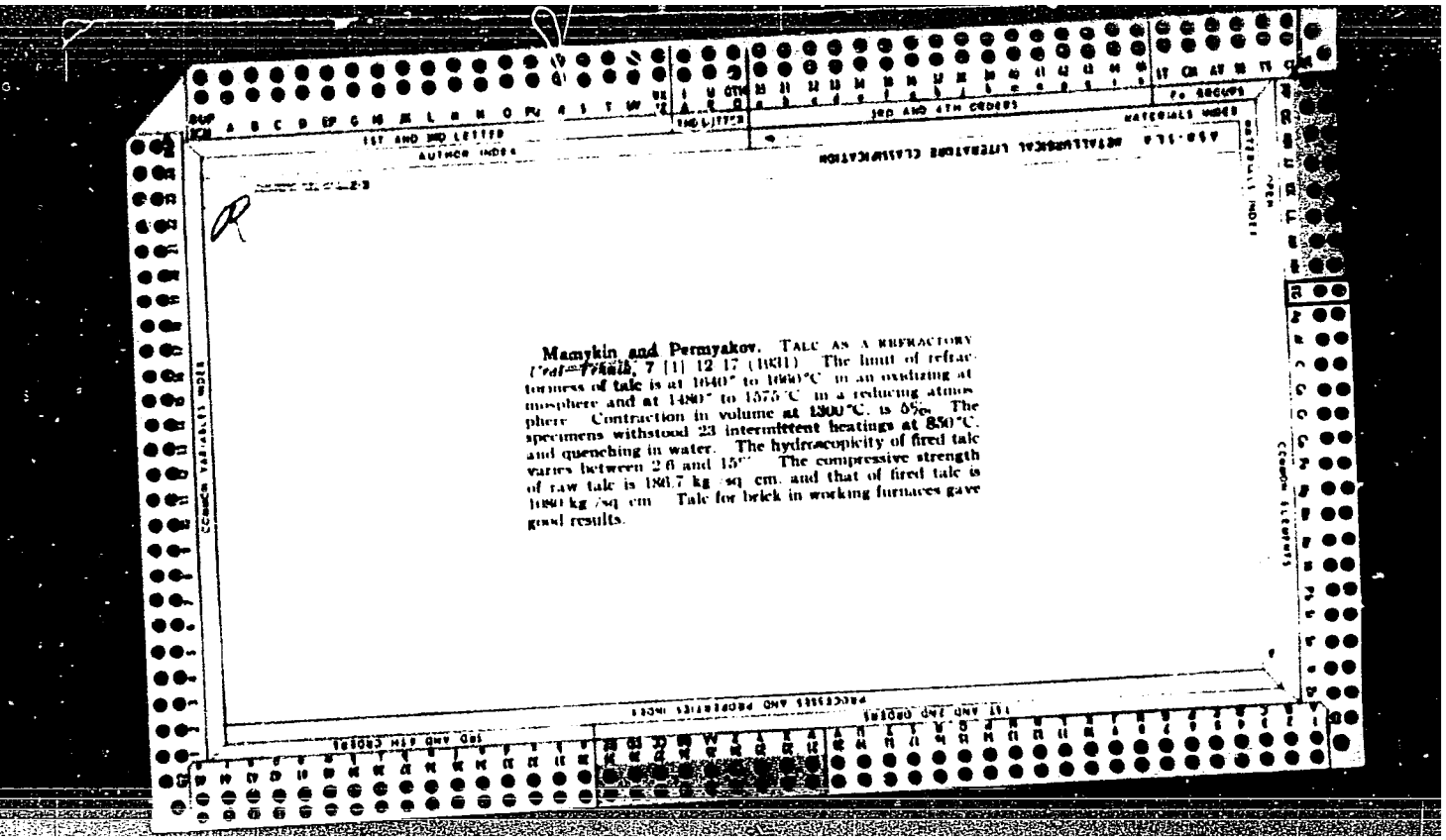
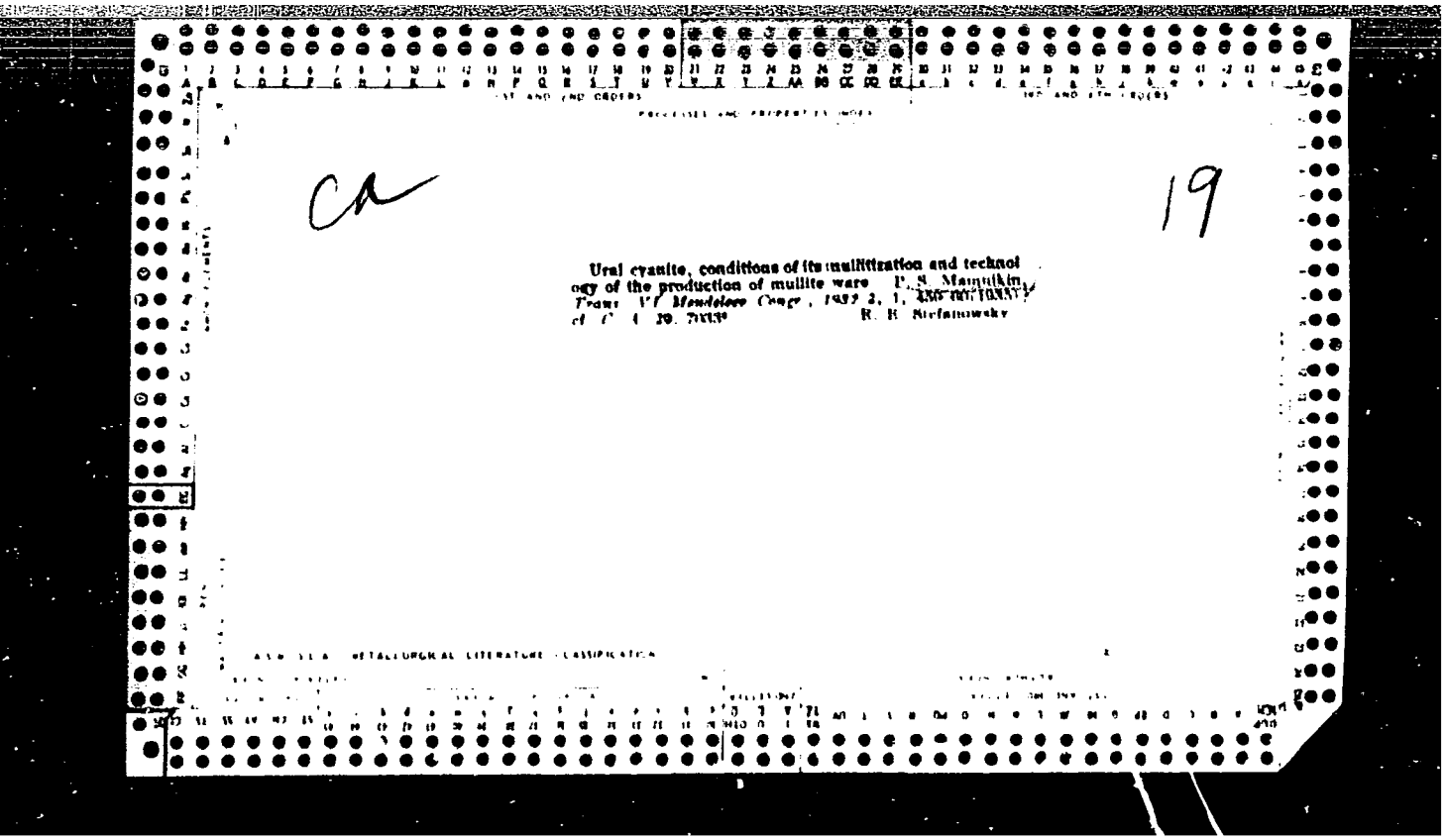


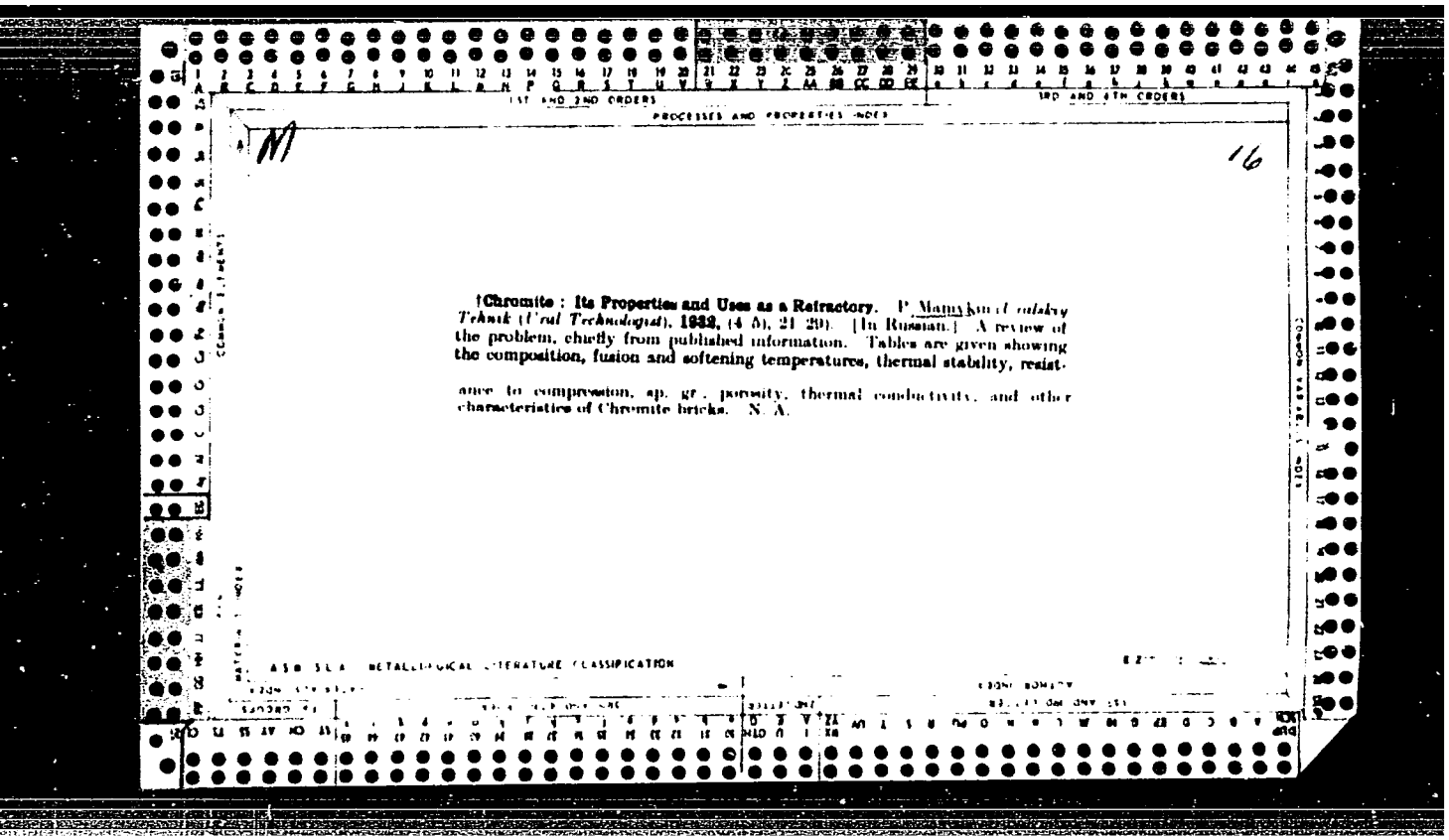
Mamykin and Permyakov. TALC AS A REFRACTORY (*Ogneupory*, 7 [1] 12-17 (1931)). The limit of refractoriness of talc is at 1640° to 1660°C. in an oxidizing atmosphere and at 1480° to 1575°C. in a reducing atmosphere. Contraction in volume at 1300°C. is 6%. The specimens withstood 23 intermittent heatings at 850°C. and quenching in water. The hydroscopicity of fired talc varies between 2.6 and 15%. The compressive strength of raw talc is 180.7 kg./sq. cm. and that of fired talc is 1080 kg./sq. cm. Talc for brick in working furnaces gave good results.



CA

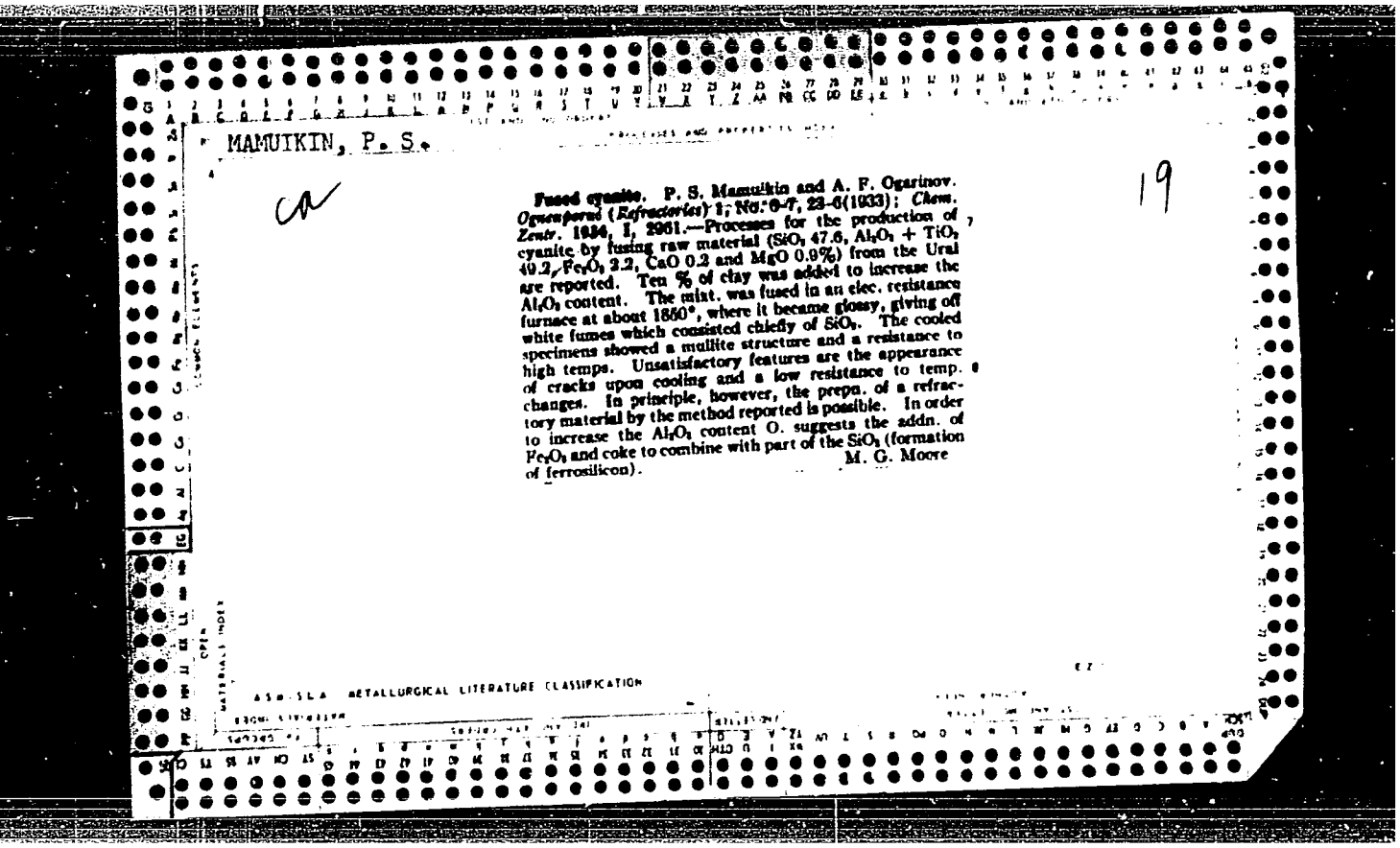
19

Ural cyanite, conditions of its mullitization and technology of the production of mullite ware. P. S. Mamykin. *Trans. Vt. Mendeleev Congr., 1939* 2, 1. R. B. Sosman



16

[Chromite : Its Properties and Uses as a Refractory. P. Mamykin. *Ural'skiy Tekhnik* (*Ural Technologist*), **1932**, (4–5), 21–29. [In Russian.] A review of the problem, chiefly from published information. Tables are given showing the composition, fusion and softening temperatures, thermal stability, resistance to compression, sp. gr., porosity, thermal conductivity, and other characteristics of Chromite bricks. N. A.

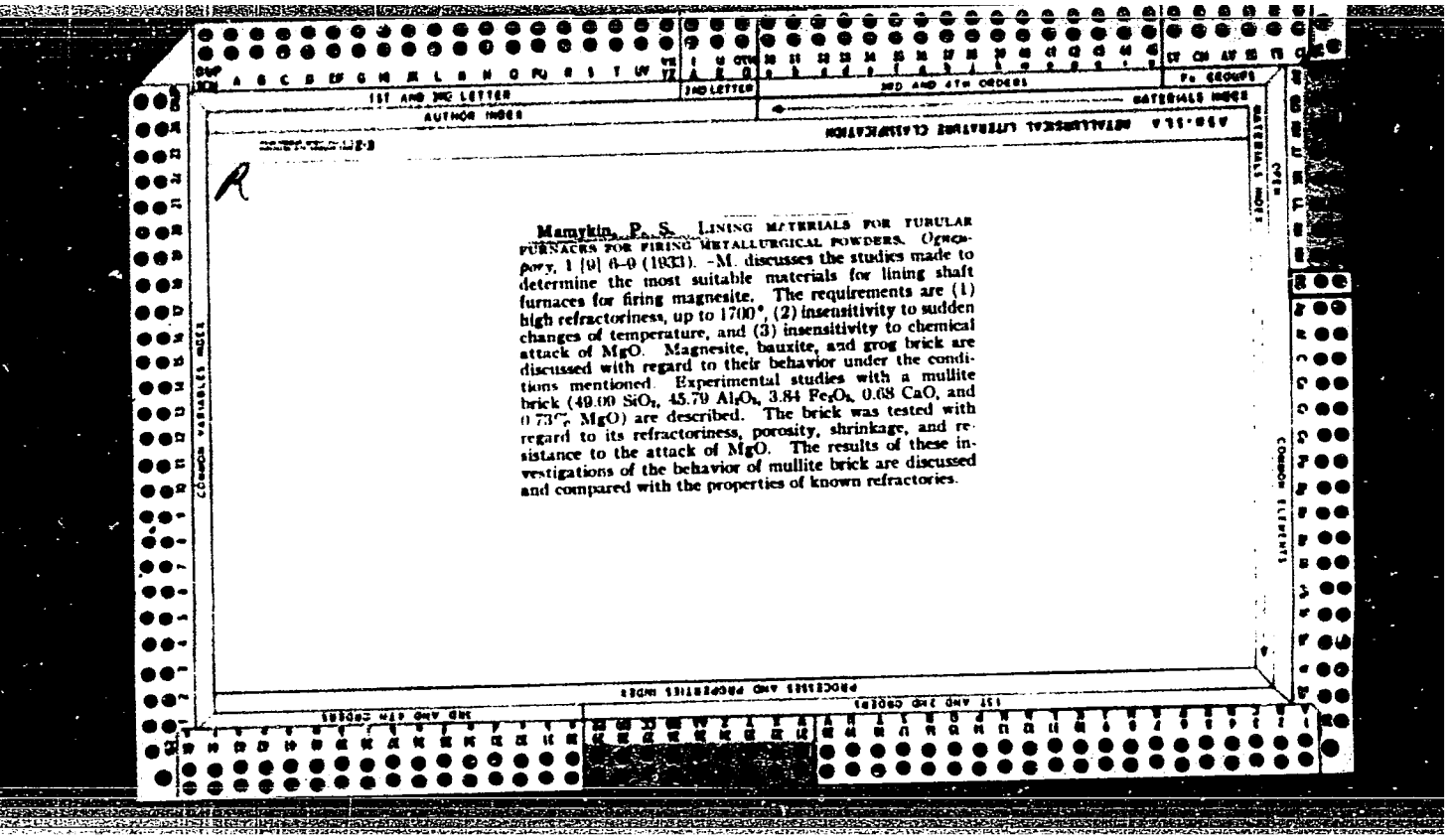


MAMUIKIN, P. S.

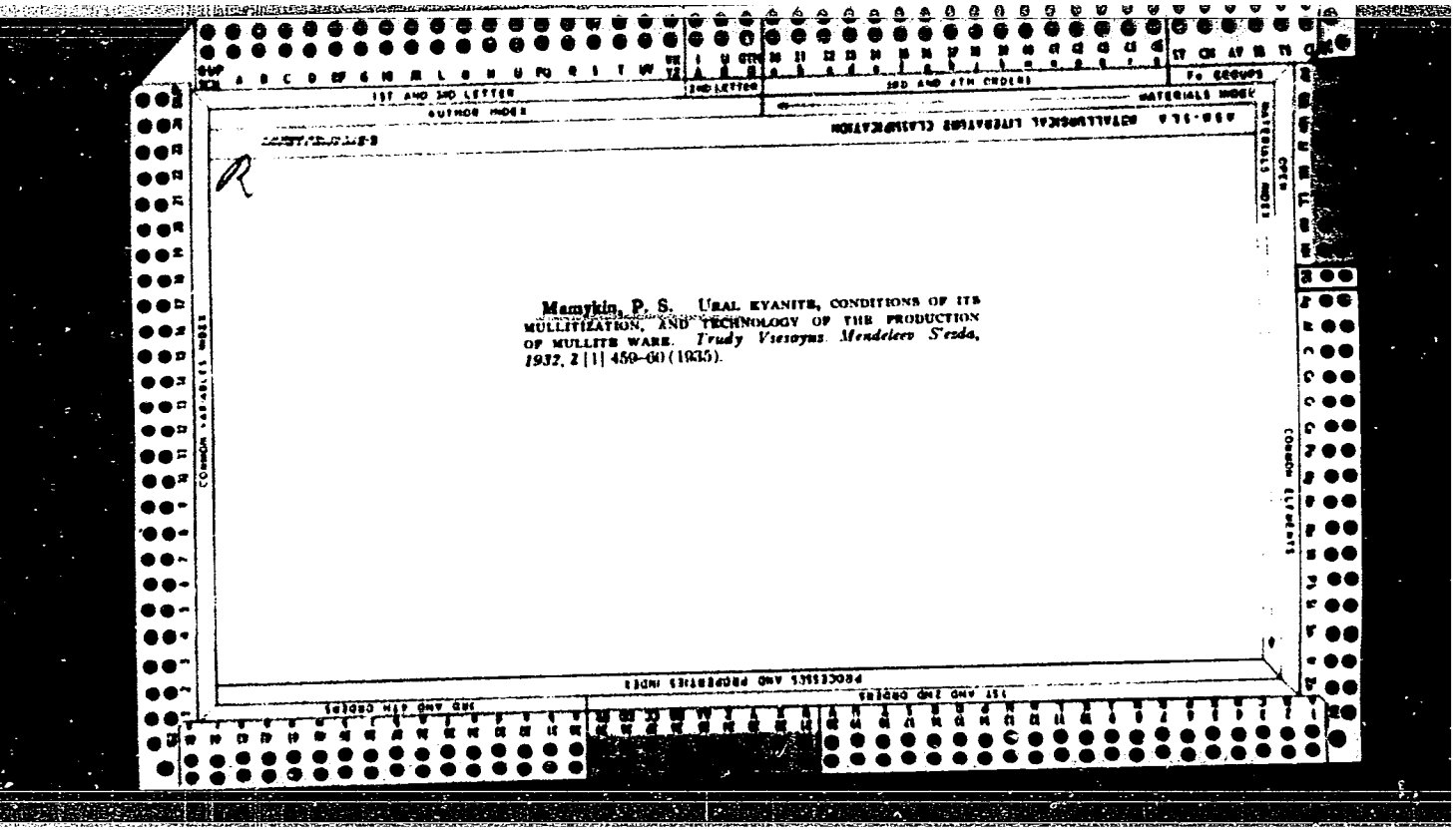
19

Fused cyanite. P. S. Mamuikin and A. F. Ogarinov. *Ogneupory* (*Refractories*) 1; No. 6-7, 23-6(1933); *Chem. Zentr.* 1934, I, 2961.—Processes for the production of cyanite by fusing raw material (SiO_2 47.6, Al_2O_3 + TiO_2 49.2, Fe_2O_3 2.2, CaO 0.2 and MgO 0.9%) from the Ural are reported. Ten % of clay was added to increase the Al_2O_3 content. The mixt. was fused in an elec. resistance furnace at about 1850°, where it became glossy, giving off white fumes which consisted chiefly of SiO_2. The cooled specimens showed a mullite structure and a resistance to high temps. Unsatisfactory features are the appearance of cracks upon cooling and a low resistance to temp. changes. In principle, however, the prepn. of a refractory material by the method reported is possible. In order to increase the Al_2O_3 content O. suggests the addn. of Fe_2O_3 and coke to combine with part of the SiO_2 (formation of ferrosilicon). M. G. Moore

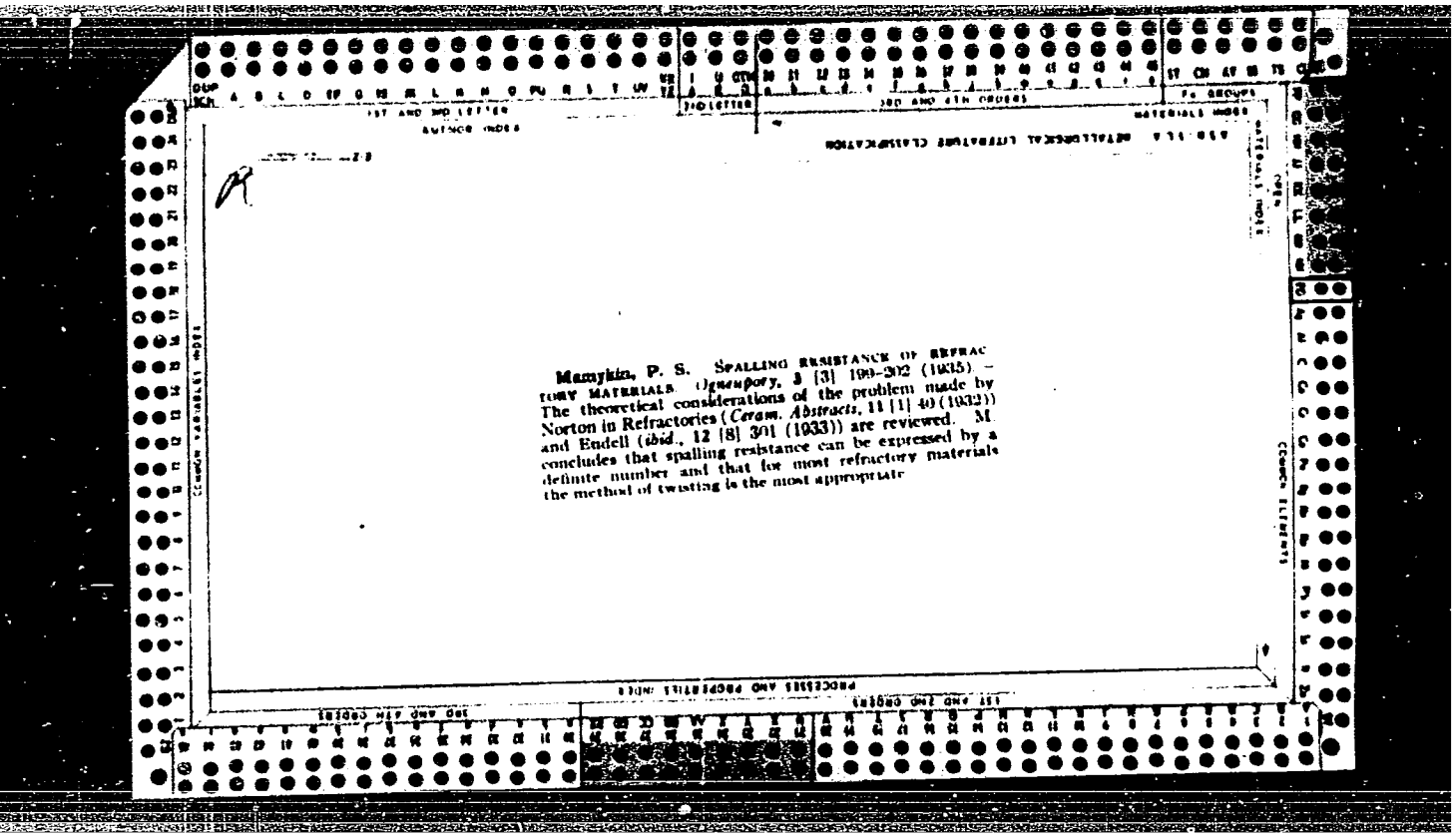
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



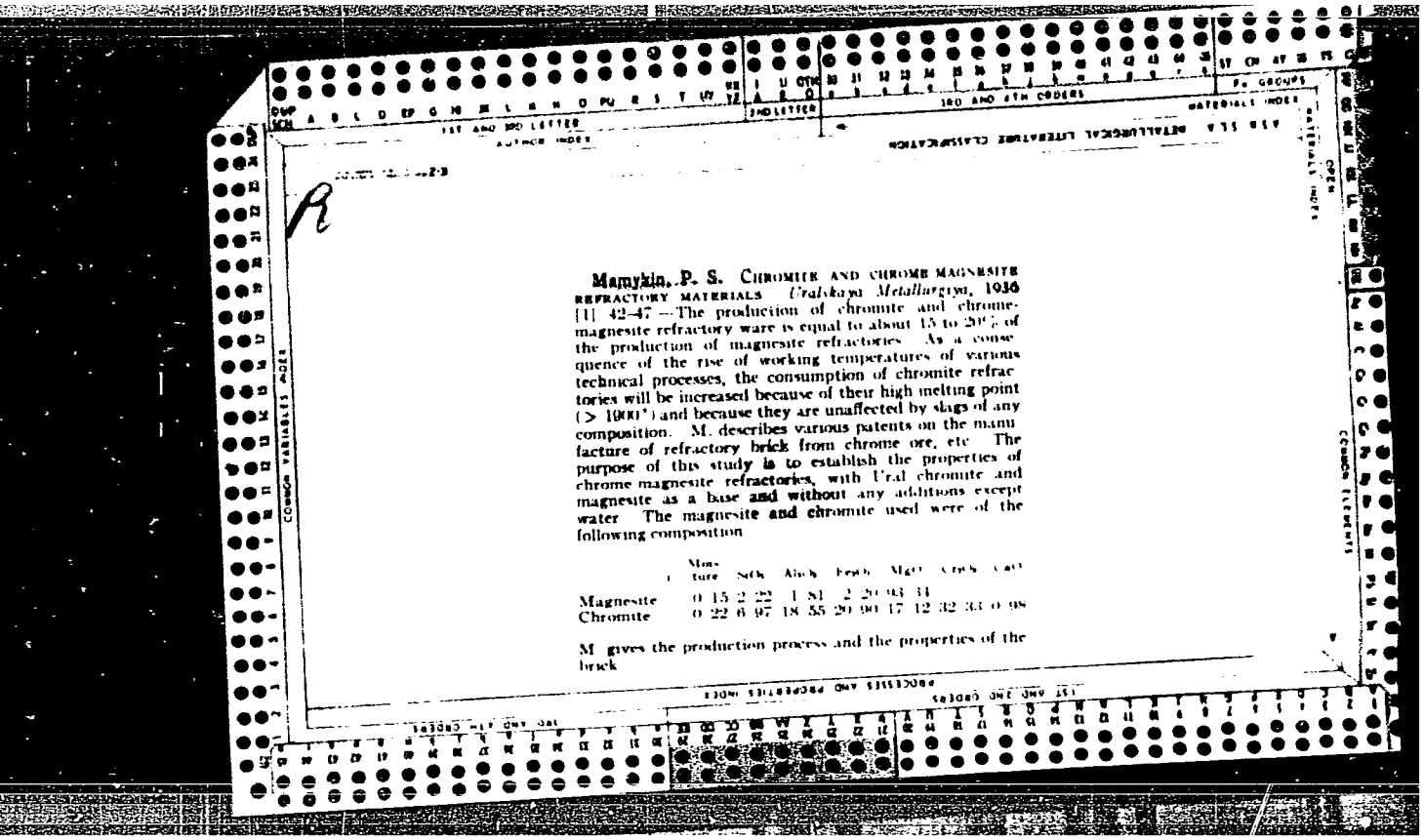
Manykin, P. S. LINING MATERIALS FOR TUBULAR FURNACES FOR FIRING METALLURGICAL POWDERS. *Ogneupory*, 1 [9] 6–9 (1933). –M. discusses the studies made to determine the most suitable materials for lining shaft furnaces for firing magnesite. The requirements are (1) high refractoriness, up to 1700°, (2) insensitivity to sudden changes of temperature, and (3) insensitivity to chemical attack of MgO. Magnesite, bauxite, and grog brick are discussed with regard to their behavior under the conditions mentioned. Experimental studies with a mullite brick (49.00 SiO_2, 45.79 Al_2O_3, 3.84 Fe_2O_3, 0.68 CaO, and 0.73% MgO) are described. The brick was tested with regard to its refractoriness, porosity, shrinkage, and resistance to the attack of MgO. The results of these investigations of the behavior of mullite brick are discussed and compared with the properties of known refractories.



Mamykin, P. S. URAL KYANITE, CONDITIONS OF ITS MULLITIZATION, AND TECHNOLOGY OF THE PRODUCTION OF MULLITE WARE. *Trudy Vsesoyuz. Mendeleev S'ezda, 1932*, 2 [1] 459–60 (1935).



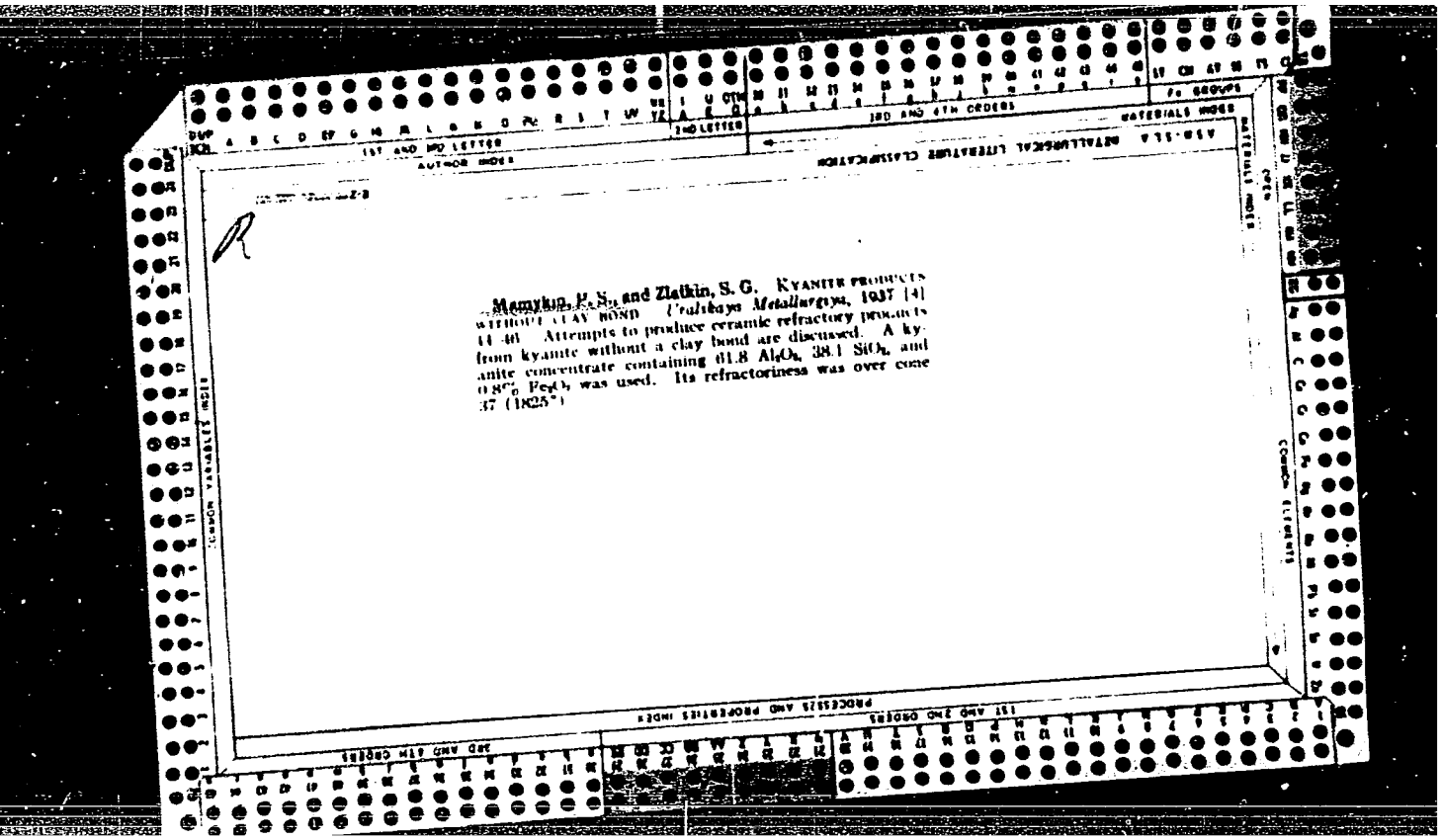
Mamykin, P. S. SPALLING RESISTANCE OF REFRACTORY MATERIALS. *Ogneupory*, 3 [3] 199–202 (1935). — The theoretical considerations of the problem made by Norton in Refractories (*Ceram. Abstracts*, 11 [1] 40 (1932)) and Endell (*ibid.*, 12 [8] 301 (1933)) are reviewed. M. concludes that spalling resistance can be expressed by a definite number and that for most refractory materials the method of twisting is the most appropriate



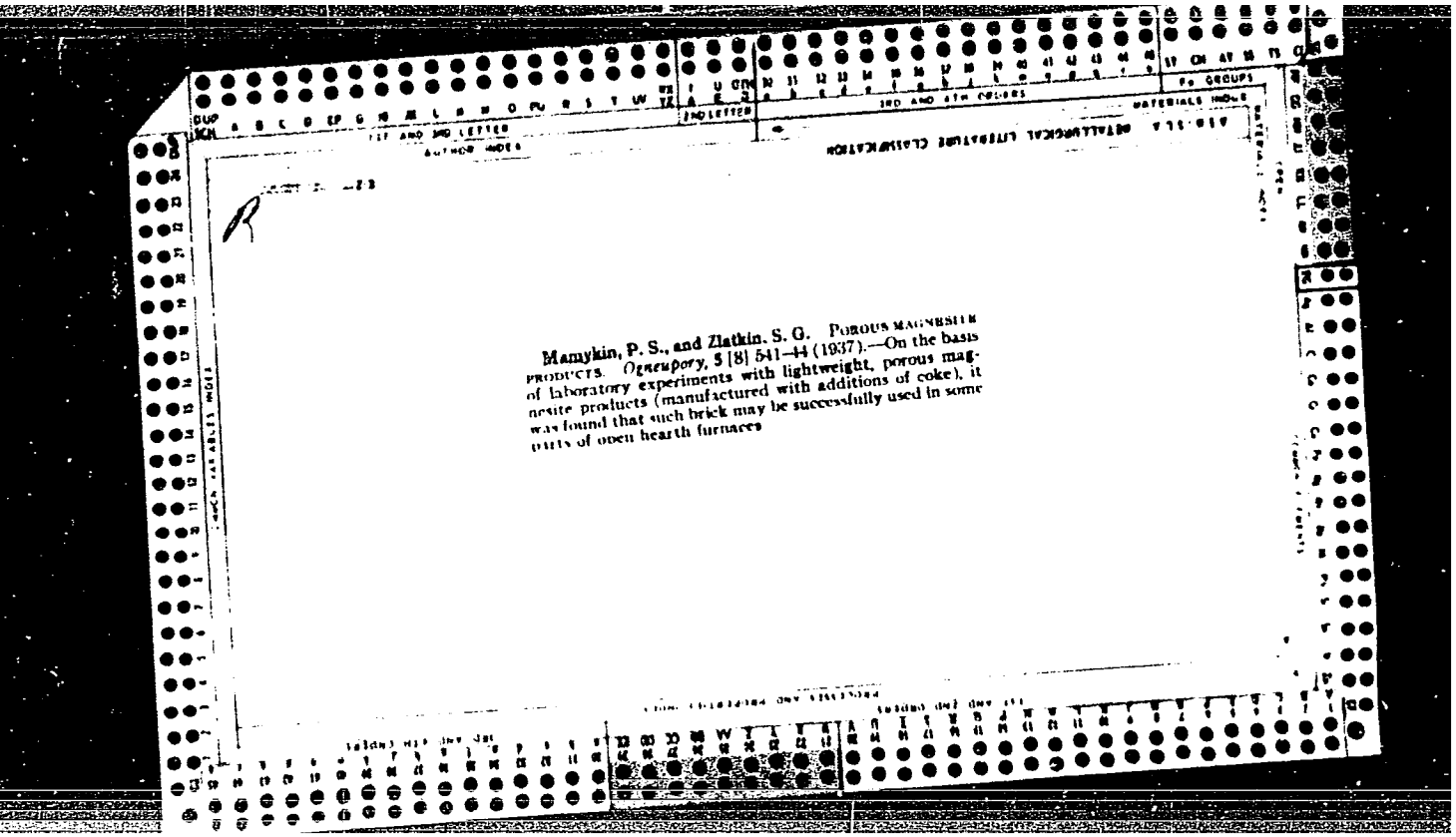
Mamykin, P. S. CHROMITE AND CHROME MAGNESITE REFRACTORY MATERIALS *Uralskaya Metallurgiya*, 1936 [1] 42–47.—The production of chromite and chrome-magnesite refractory ware is equal to about 15 to 20% of the production of magnesite refractories. As a consequence of the rise of working temperatures of various technical processes, the consumption of chromite refractories will be increased because of their high melting point (> 1900°) and because they are unaffected by slags of any composition. M. describes various patents on the manufacture of refractory brick from chrome ore, etc. The purpose of this study is to establish the properties of chrome magnesite refractories, with Ural chromite and magnesite as a base and without any additions except water. The magnesite and chromite used were of the following composition

	Moisture	SiO2	Al2O3	Fe2O3	MgO	CaO	CaO
Magnesite	0.15	2.22	1.81	2.20	93.31		
Chromite	0.22	6.97	18.55	29.90	17.12	32.33	0.98

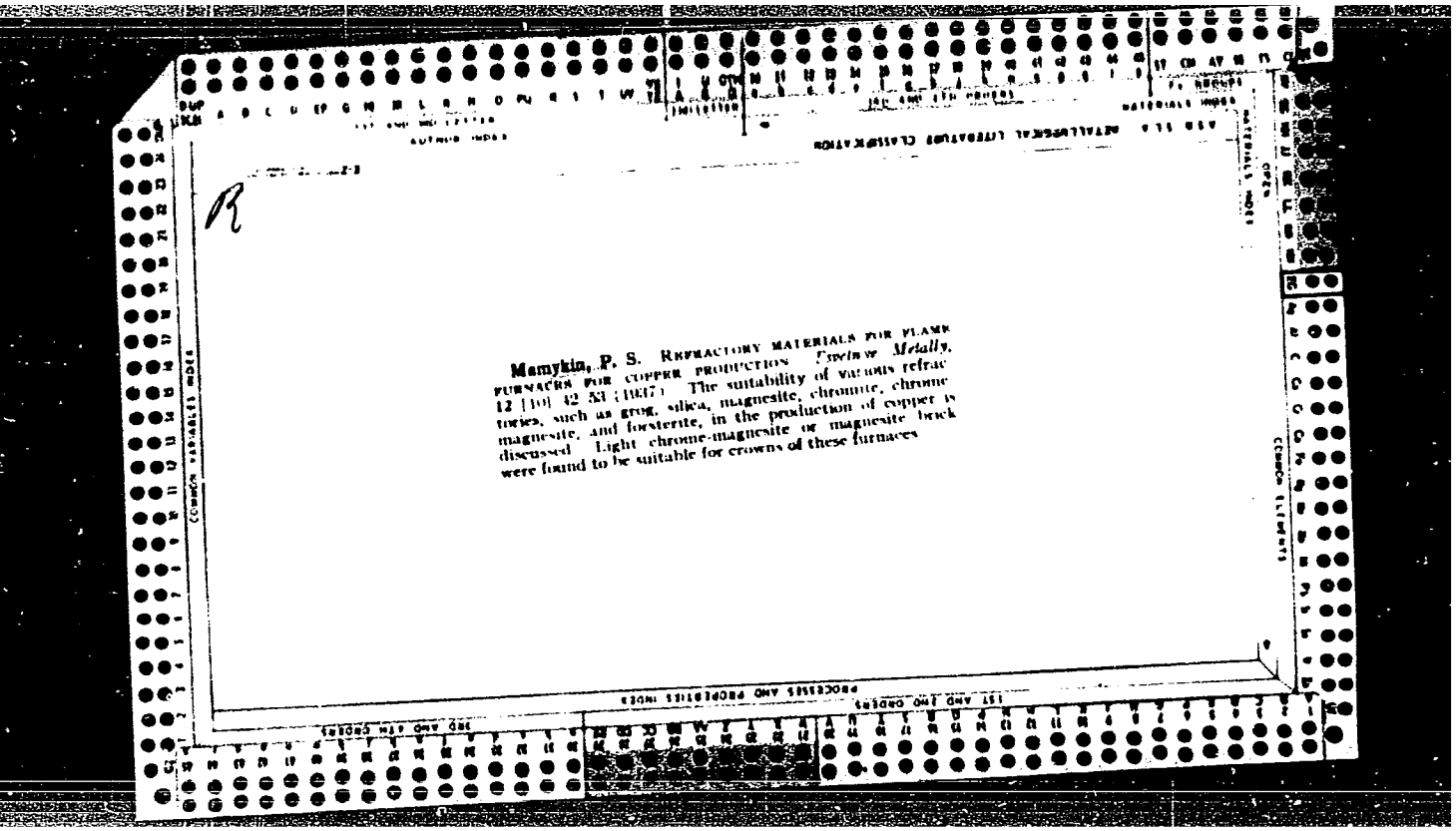
M. gives the production process and the properties of the brick.



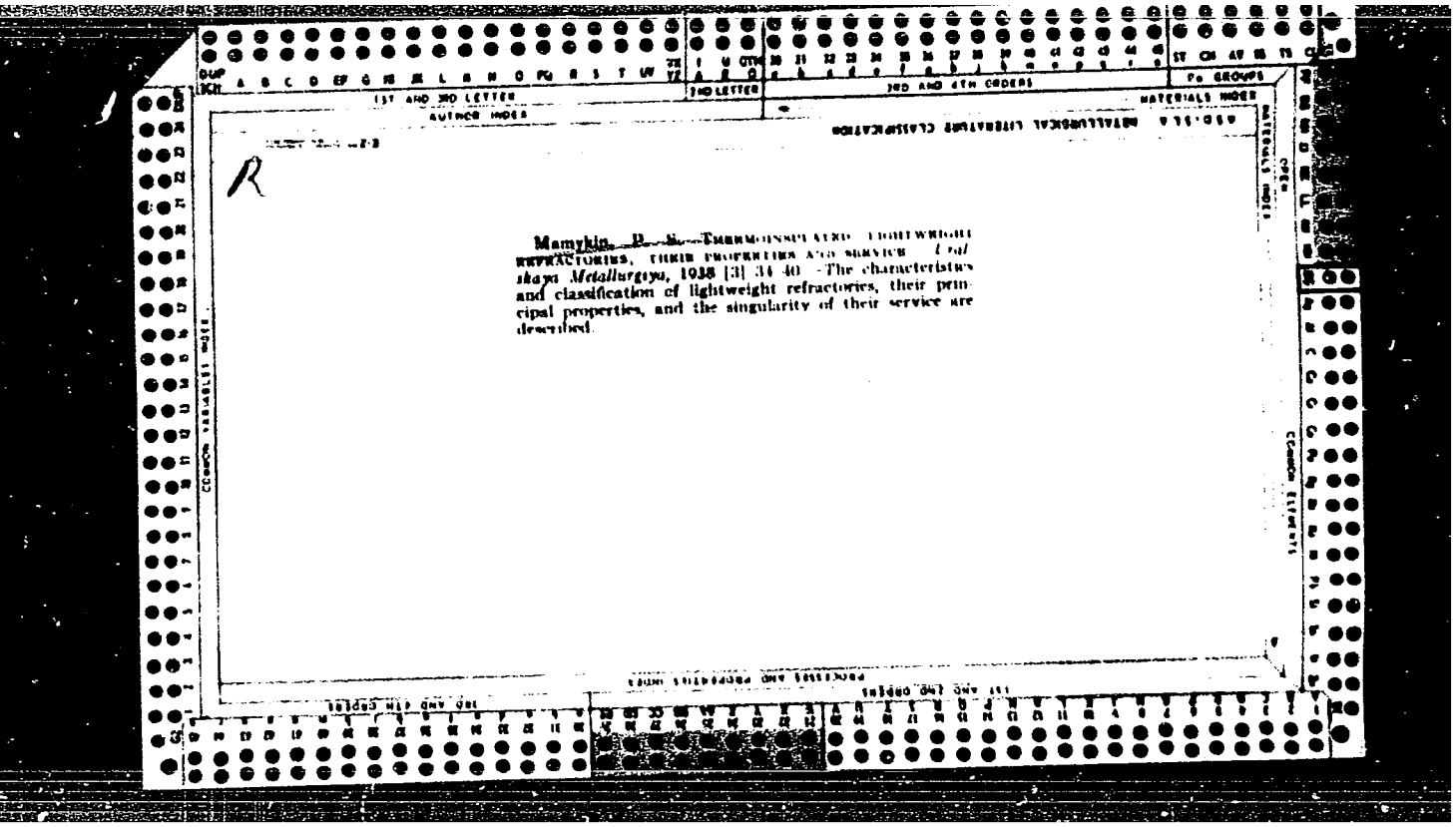
Mamykin, P. S., and Zlatkin, S. G. KYANITE PRODUCTS WITHOUT CLAY BOND. *Ural'skaya Metallurgiya*, 1937 [4] 44-46. Attempts to produce ceramic refractory products from kyanite without a clay bond are discussed. A kyanite concentrate containing 61.8 Al_2O_3, 38.1 SiO_2, and 0.8% Fe_2O_3 was used. Its refractoriness was over cone 37 (1825°)



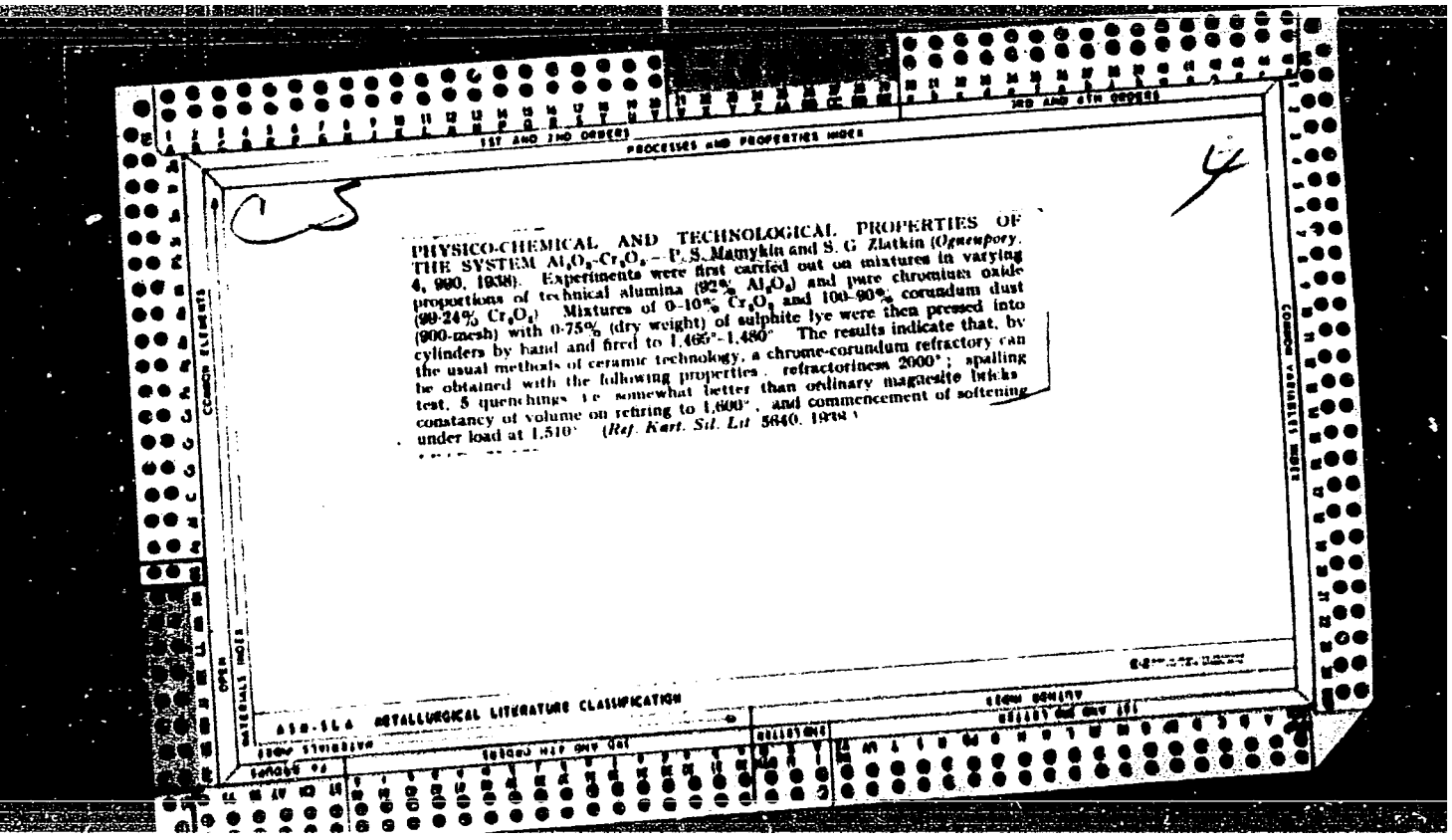
Mamykin, P. S., and Zlatkin, S. G. POROUS MAGNESITE PRODUCTS. *Ogneupory*, 5 [8] 341–44 (1937).—On the basis of laboratory experiments with lightweight, porous magnesite products (manufactured with additions of coke), it was found that such brick may be successfully used in some parts of open hearth furnaces



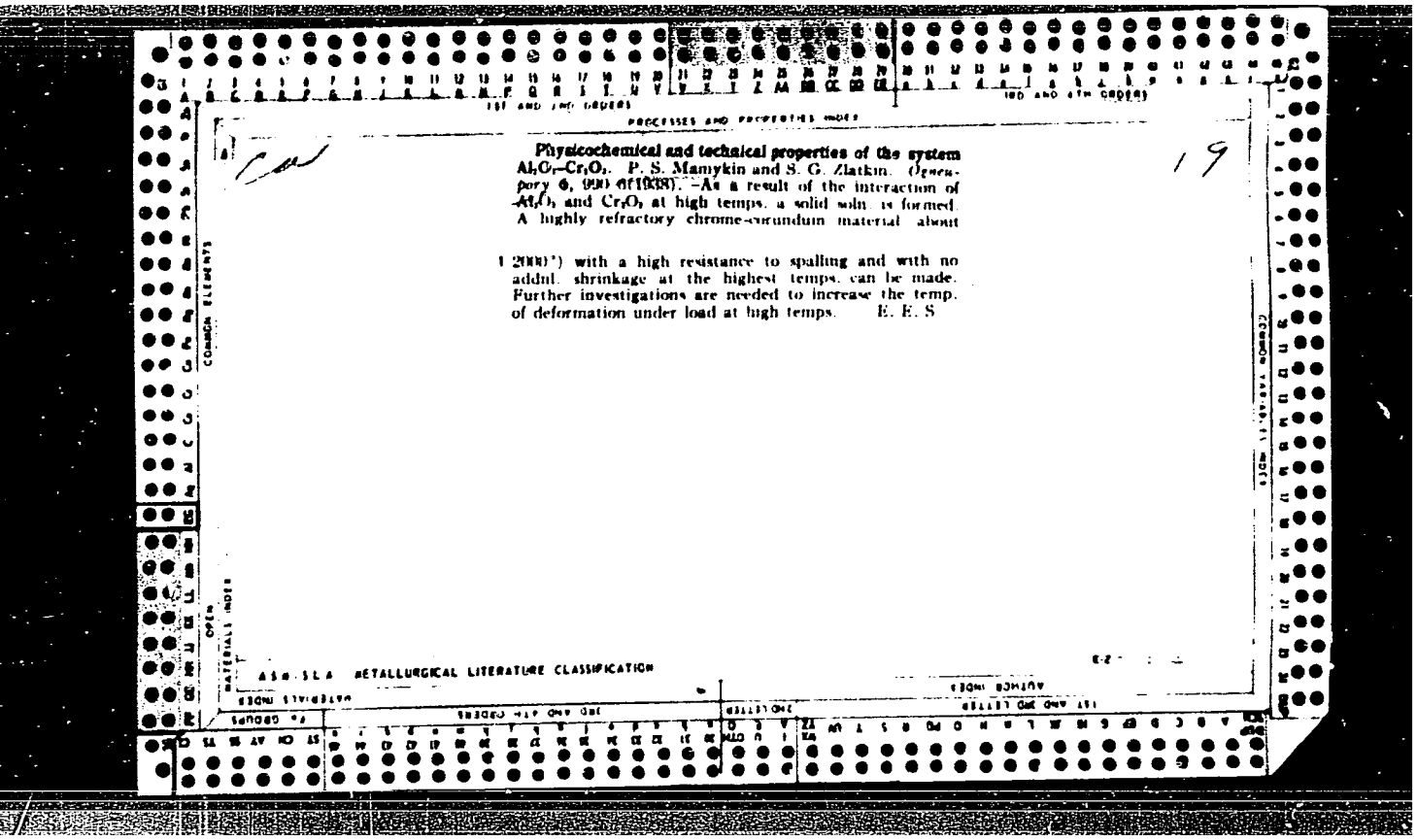
Mamykin, P. S. REFRACTORY MATERIALS FOR FLAME FURNACES FOR COPPER PRODUCTION. *Tsvetn. Metally*, 12 [10] 42-53 [1967]. The suitability of various refractories, such as grog, silica, magnesite, chromite, chrome magnesite, and forsterite, in the production of copper is discussed. Light chrome-magnesite or magnesite brick were found to be suitable for crowns of these furnaces.



Mamykin, P. S. THERMOINSULATING LIGHTWEIGHT REFRACTORIES, THEIR PROPERTIES AND SERVICE. *Trudy Instituta Metallurgii*, 1938 [3] 31-40.—The characteristics and classification of lightweight refractories, their principal properties, and the singularity of their service are described.

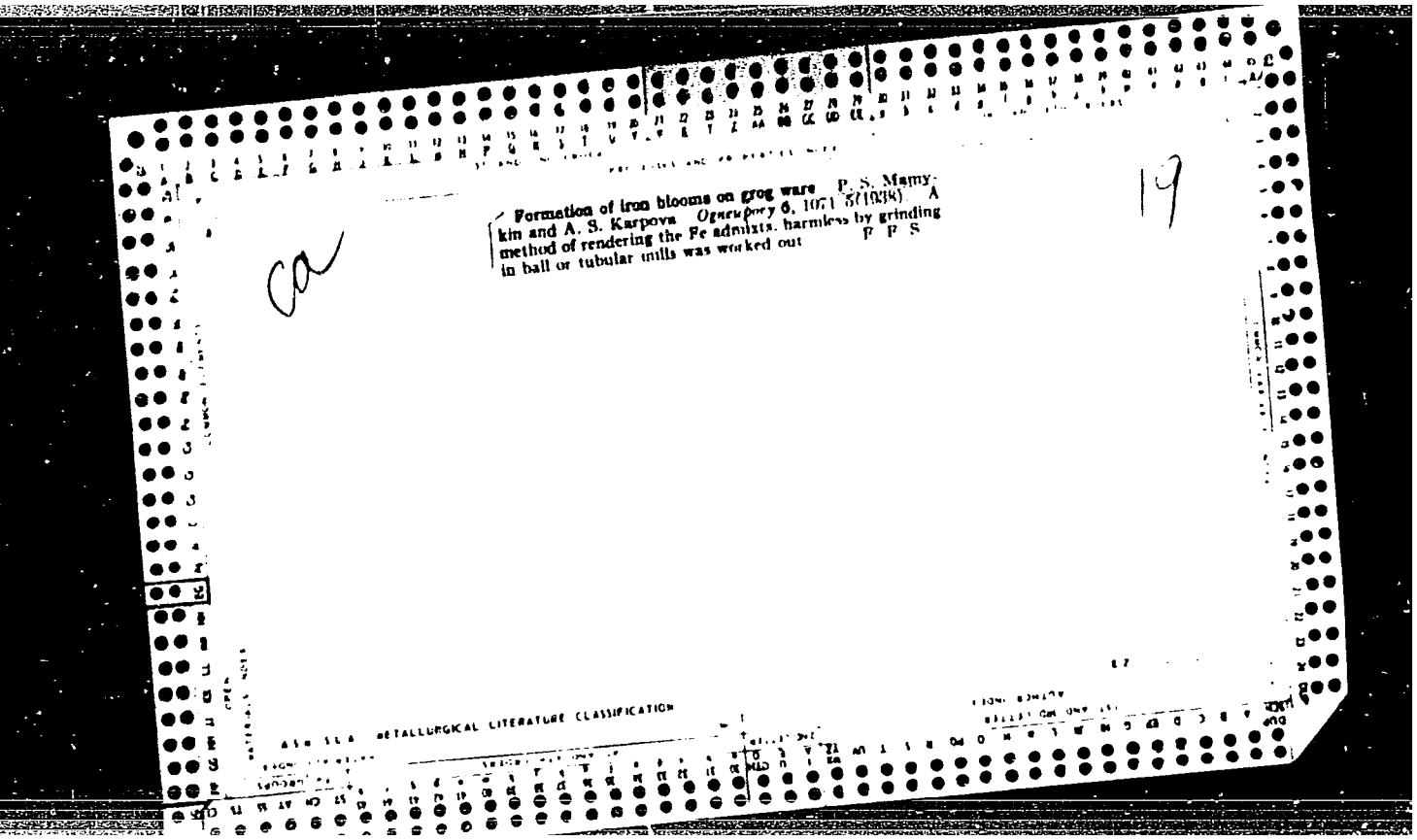


PHYSICO-CHEMICAL AND TECHNOLOGICAL PROPERTIES OF THE SYSTEM Al_2O_3-Cr_2O_3.—P. S. Mamykin and S. G. Zlatkin (*Ogneupory*, 4, 980, 1938). Experiments were first carried out on mixtures in varying proportions of technical alumina (92% Al_2O_3) and pure chromium oxide (99·24% Cr_2O_3). Mixtures of 0–10% Cr_2O_3 and 100–90% corundum dust (900-mesh) with 0·75% (dry weight) of sulphite lye were then pressed into cylinders by hand and fired to 1,465°–1,480°. The results indicate that, by the usual methods of ceramic technology, a chrome-corundum refractory can be obtained with the following properties: refractoriness 2000°; spalling test, 8 quenchings 1·6 somewhat better than ordinary magnesite bricks; constancy of volume on refiring to 1,600°; and commencement of softening under load at 1,510°. (*Ref. Kart. Sil. Lit* 5840, 1938.)



Physicochemical and technical properties of the system Al_2O_3–Cr_2O_3. P. S. Mamykin and S. G. Zlatkin. *Ogneupory* 6, 990 (1938). –As a result of the interaction of Al_2O_3 and Cr_2O_3 at high temps. a solid soln. is formed. A highly refractory chrome-corundum material about

1 2000°) with a high resistance to spalling and with no addnl. shrinkage at the highest temps. can be made. Further investigations are needed to increase the temp. of deformation under load at high temps. E. E. S



Formation of iron blooms on grog ware P. S. Mamykin and A. S. Karpova *Ogneupory* 6, 1071 5(1938) A method of rendering the Fe admixts. harmless by grinding in ball or tubular mills was worked out P P S

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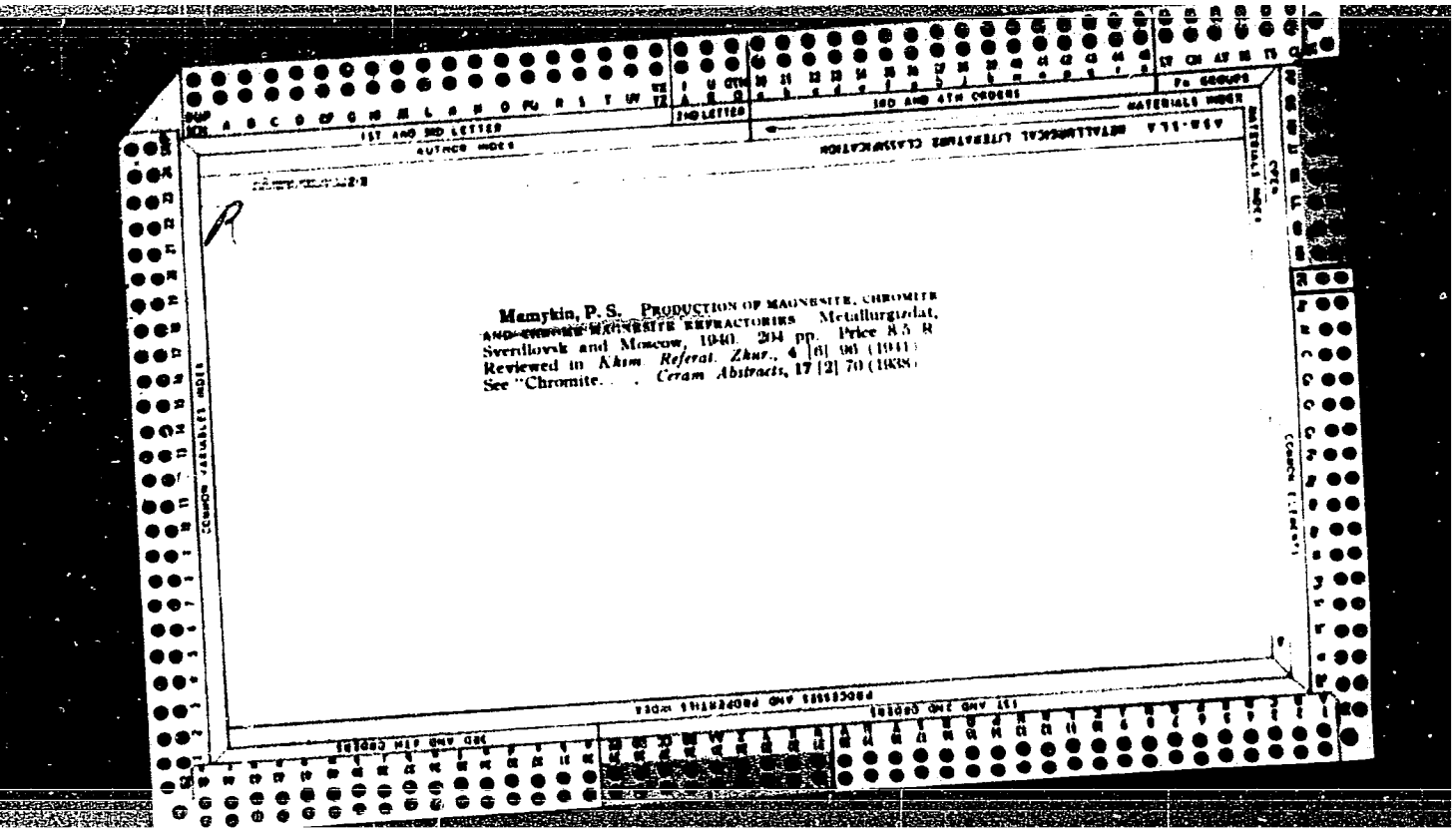
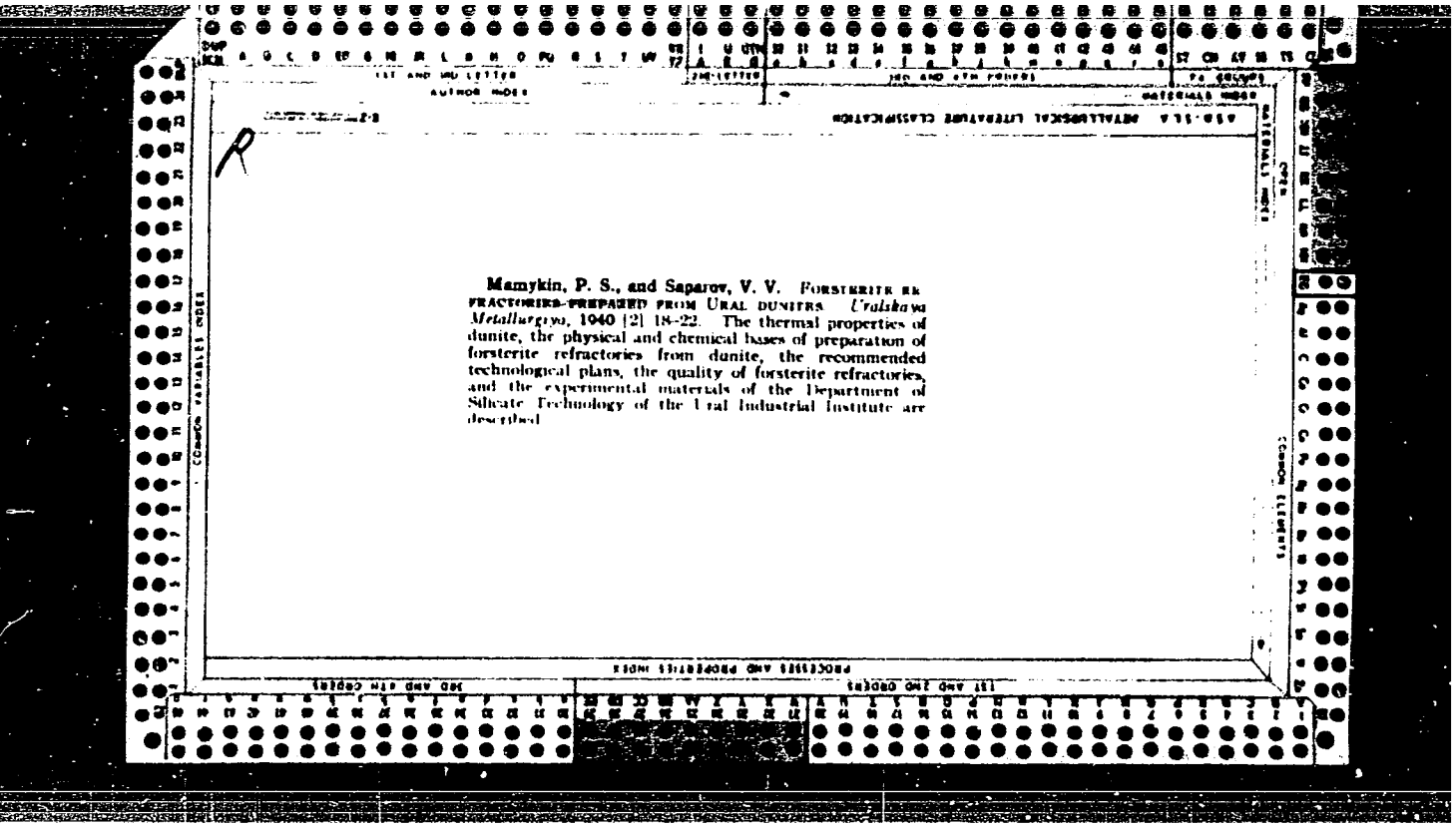
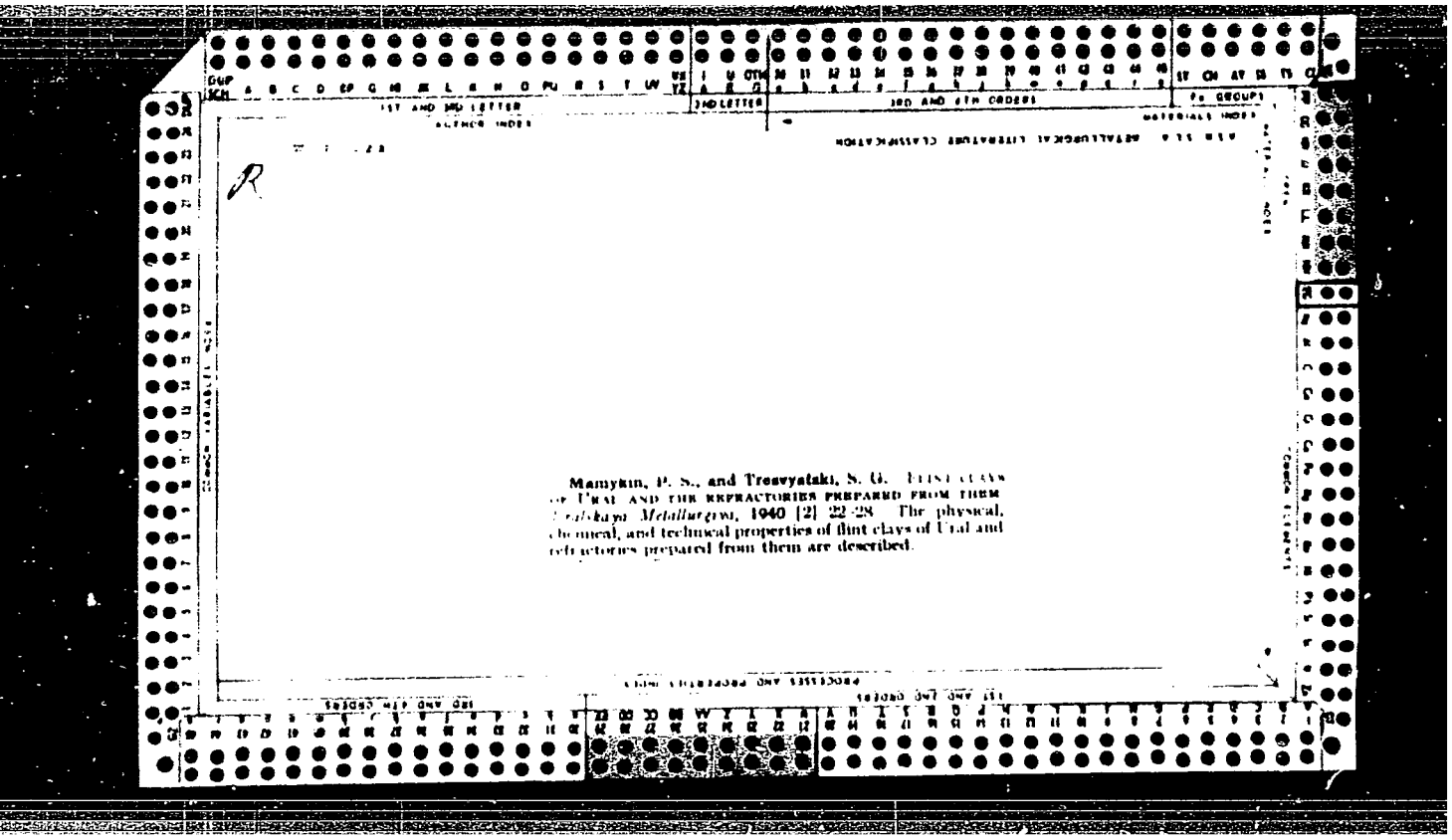
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



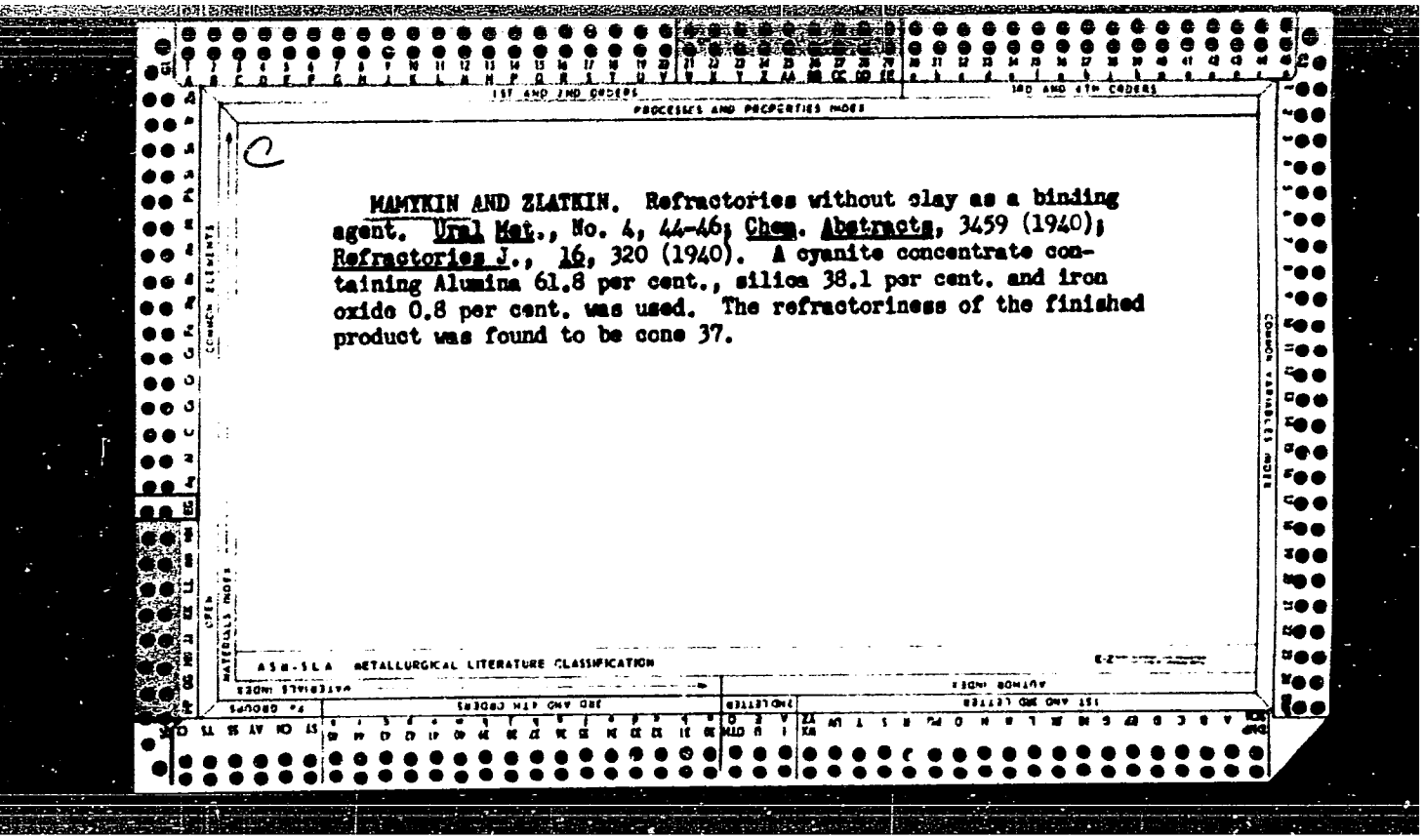
Mamykin, P. S. PRODUCTION OF MAGNESITE, CHROMITE AND CHROMITE-MAGNESITE REFRACTORIES. Metallurgizdat, Sverdlovsk and Moscow, 1940. 204 pp. Price 8.5 R
Reviewed in *Khim. Referat. Zhur.*, 4 [6] 93 (1941)
See "Chromite. . . ." *Ceram. Abstracts*, 17 [2] 70 (1938)



Mamykin, P. S., and Saparov, V. V. FORSTERITE REFRACTORIES PREPARED FROM URAL DUNITES. *Uralskaya Metallurgiya*, 1940 [2] 18–22. The thermal properties of dunite, the physical and chemical bases of preparation of forsterite refractories from dunite, the recommended technological plans, the quality of forsterite refractories, and the experimental materials of the Department of Silicate Technology of the Ural Industrial Institute are described.



Manykin, P. S., and Tresvyatski, S. G. FLINT CLAYS OF URAL AND THE REFRACTORIES PREPARED FROM THEM. *Stal'skaya Metallurgiya*, 1940 [2] 22-28. The physical, chemical, and technical properties of flint clays of Ural and refractories prepared from them are described.



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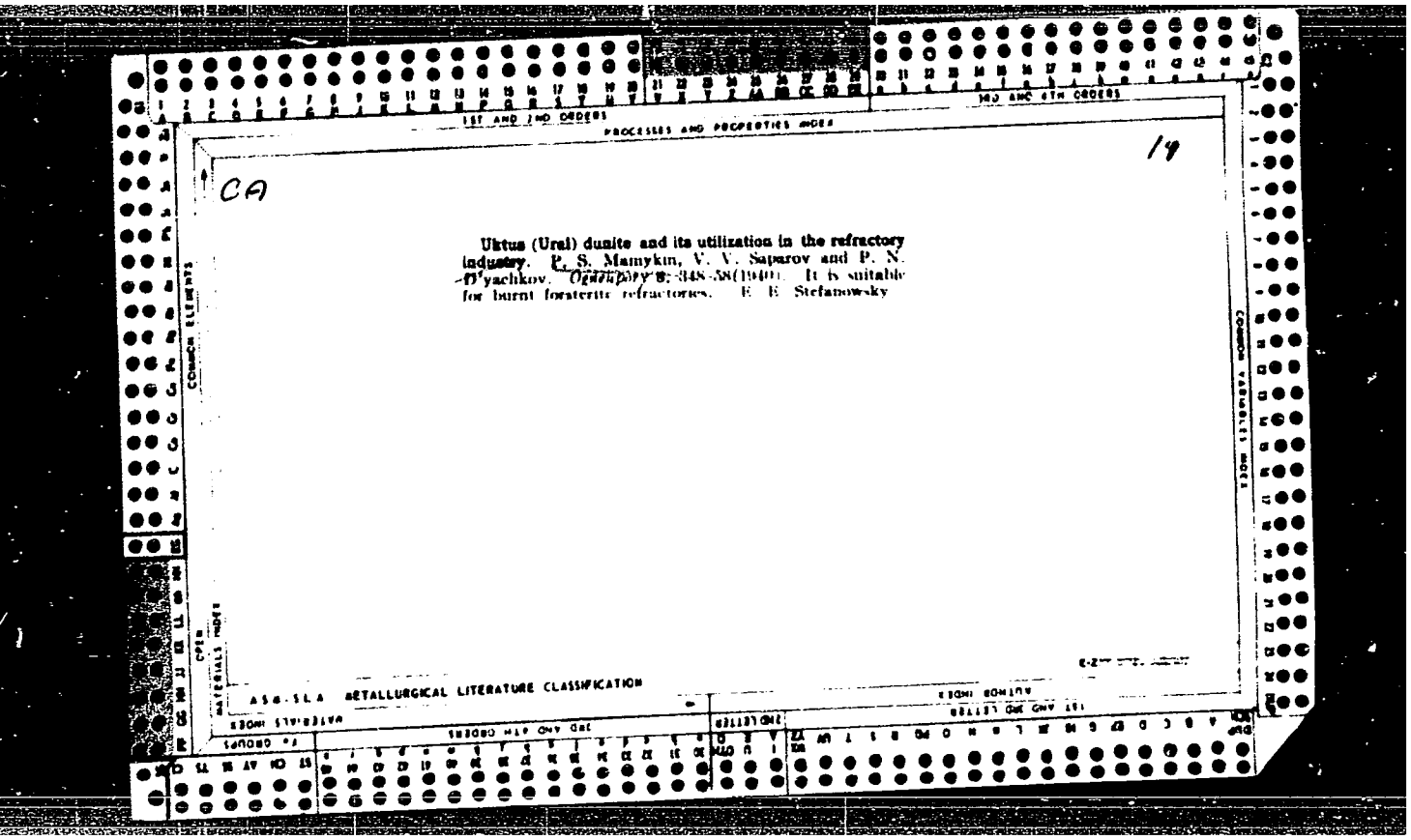
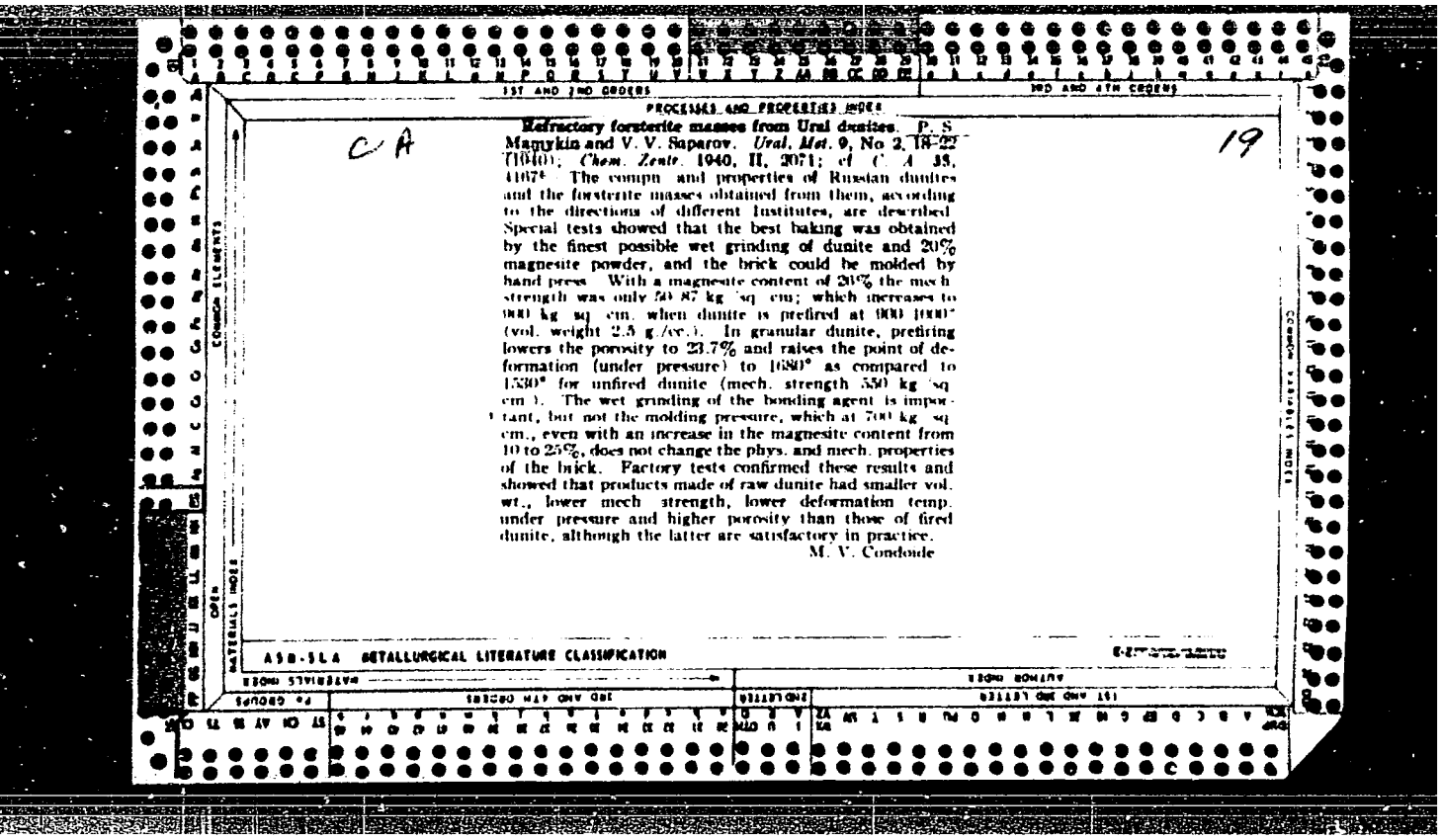
MAMYKIN AND ZLATKIN. Refractories without clay as a binding agent. Ural Met., No. 4, 44-46; Chem. Abstracts, 3459 (1940); Refractories J., 16, 320 (1940). A cyanite concentrate containing Alumina 61.8 per cent., silica 38.1 per cent. and iron oxide 0.8 per cent. was used. The refractoriness of the finished product was found to be cone 37.





1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

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Refractory forsterite masses from Ural dunites. P. S. Mamykin and V. V. Saparov. *Ural. Met.* 9, No 2, 18-22 (1940); *Chem. Zentr.* 1940, II, 2071; cf. *C. A.* 35, 4167⁸. The compn. and properties of Russian dunites and the forsterite masses obtained from them, according to the directions of different Institutes, are described. Special tests showed that the best baking was obtained by the finest possible wet grinding of dunite and 20% magnesite powder, and the brick could be molded by hand press. With a magnesite content of 20% the mech. strength was only 50.87 kg./sq. cm.; which increases to 900 kg./sq. cm. when dunite is prefired at 900-1000° (vol. weight 2.5 g./cc.). In granular dunite, prefiring lowers the porosity to 23.7% and raises the point of deformation (under pressure) to 1680° as compared to 1530° for unfired dunite (mech. strength 550 kg./sq. cm.). The wet grinding of the bonding agent is important, but not the molding pressure, which at 700 kg./sq. cm., even with an increase in the magnesite content from 10 to 25%, does not change the phys. and mech. properties of the brick. Factory tests confirmed these results and showed that products made of raw dunite had smaller vol. wt., lower mech. strength, lower deformation temp. under pressure and higher porosity than those of fired dunite, although the latter are satisfactory in practice.

M. V. Condonde

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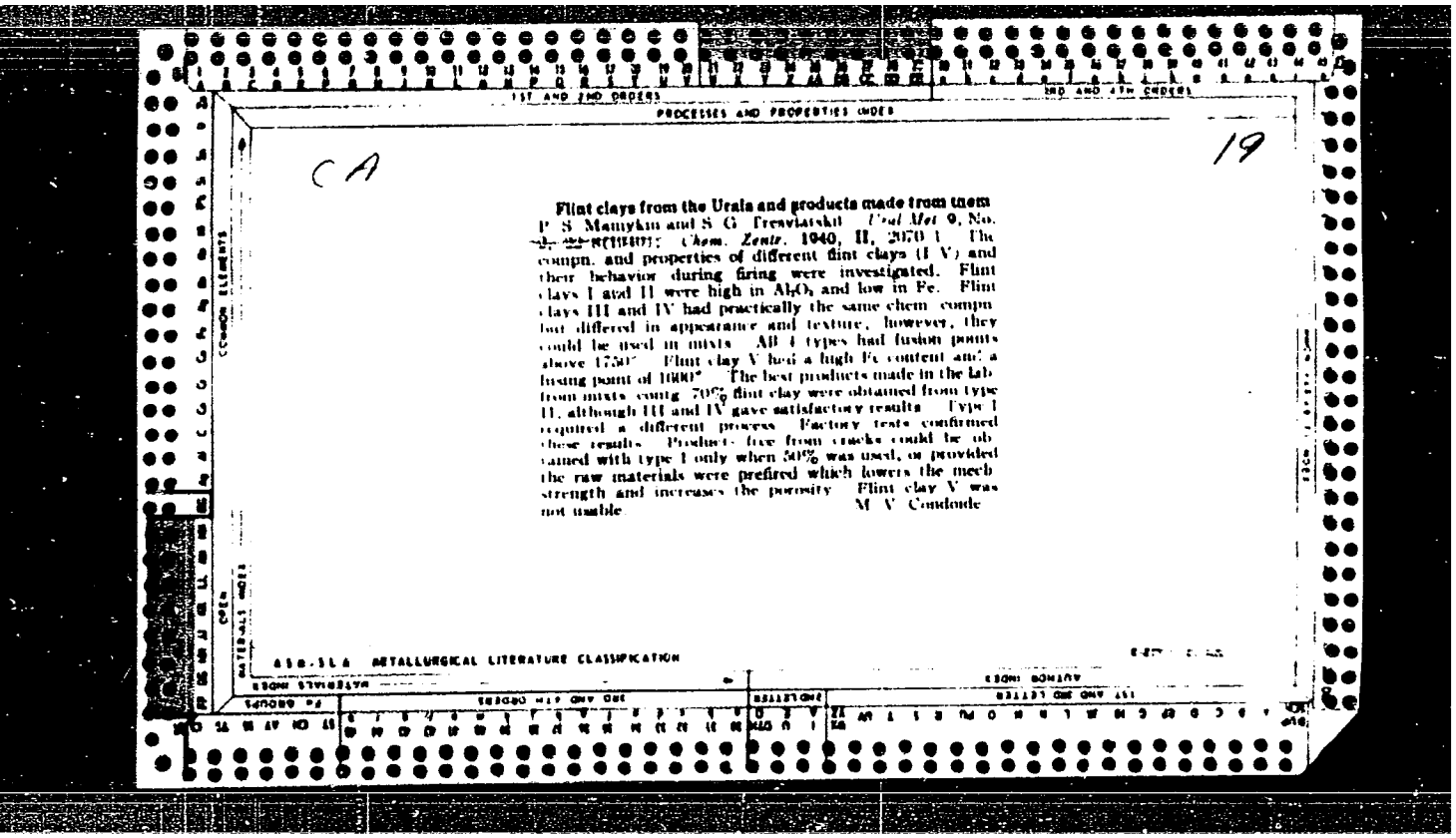

CA

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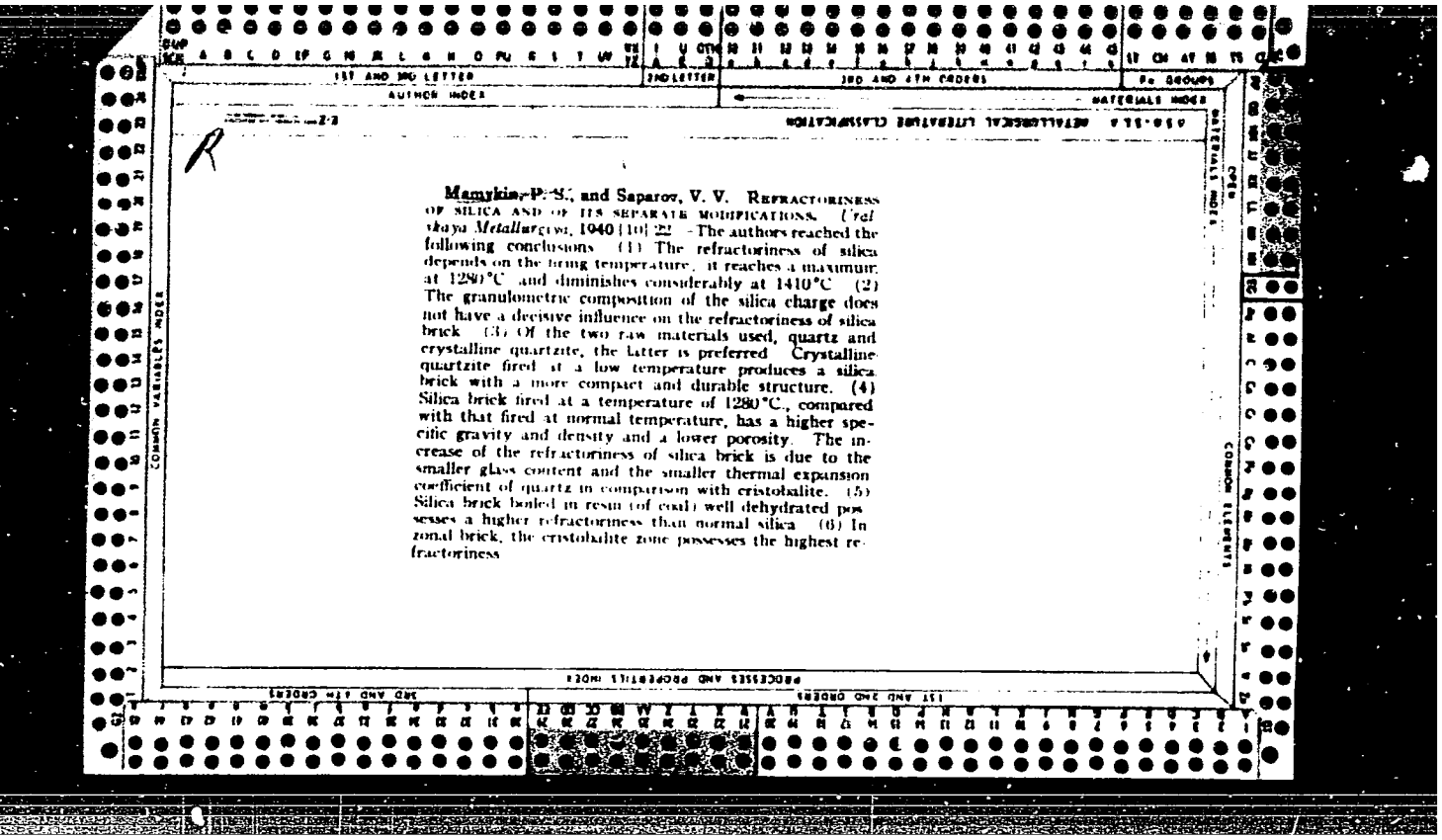
Flint clays from the Urals and products made from them

P S Mamykin and S G Treviatskii *Ural Met* 9, No. [illegible] SCIENCE; *Chem. Zentr.* 1940, II, 2070) The compn. and properties of different flint clays (I V) and their behavior during firing were investigated. Flint clays I and II were high in Al_2O_3 and low in Fe. Flint clays III and IV had practically the same chem compn but differed in appearance and texture, however, they could be used in mixts All 4 types had fusion points above 1750° Flint clay V had a high Fe content and a fusing point of 1080° The best products made in the lab from mixts contg 70% flint clay were obtained from type II, although III and IV gave satisfactory results Type I required a different process Factory tests confirmed these results Products free from cracks could be obtained with type I only when 50% was used, or provided the raw materials were prefired which lowers the mech strength and increases the porosity Flint clay V was not usable

M V Condoide



Mamykin, P. S., and Saparov, V. V. REFRACTORINESS OF SILICA AND OF ITS SEPARATE MODIFICATIONS. *Vestnik Metallurgii*, 1940 (10) 22. – The authors reached the following conclusions: (1) The refractoriness of silica depends on the firing temperature; it reaches a maximum at 1280°C and diminishes considerably at 1410°C. (2) The granulometric composition of the silica charge does not have a decisive influence on the refractoriness of silica brick. (3) Of the two raw materials used, quartz and crystalline quartzite, the latter is preferred. Crystalline quartzite fired at a low temperature produces a silica brick with a more compact and durable structure. (4) Silica brick fired at a temperature of 1280°C., compared with that fired at normal temperature, has a higher specific gravity and density and a lower porosity. The increase of the refractoriness of silica brick is due to the smaller glass content and the smaller thermal expansion coefficient of quartz in comparison with cristobalite. (5) Silica brick boiled in resin (of coal) well dehydrated possesses a higher refractoriness than normal silica. (6) In zonal brick, the cristobalite zone possesses the highest refractoriness.

BAS'YAS, Igor' Pavlovich; CHERNOGOLOV, Aleksey Ivanovich; MAMYKIN, P.S., prof., retsenzent; LEVCHENKO, P.V., red.; SKOROBOGACHEVA, A.P., red. izd-va; CHAPAYKINA, F.K., red. izd-va; TURKINA, Ye.D., tekhn. red.

[Open-hearth furnace regenerators] Regeneratory martenovskikh pechei. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii Sverdlovskoe otd-nie, 1961. 174 p. (MIRA 14:7)
(Open-hearth furnaces--Equipment and supplies)
(Heat regenerators)

BELYANKIN, D. S.;LAPIN, V.V.; MAMYKIN, P. S.

"About One Case of Abnormally Rapid Depletion of Dinas Brick in the Crown of an Open Hearth Furnace." Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No 1-2-1951.

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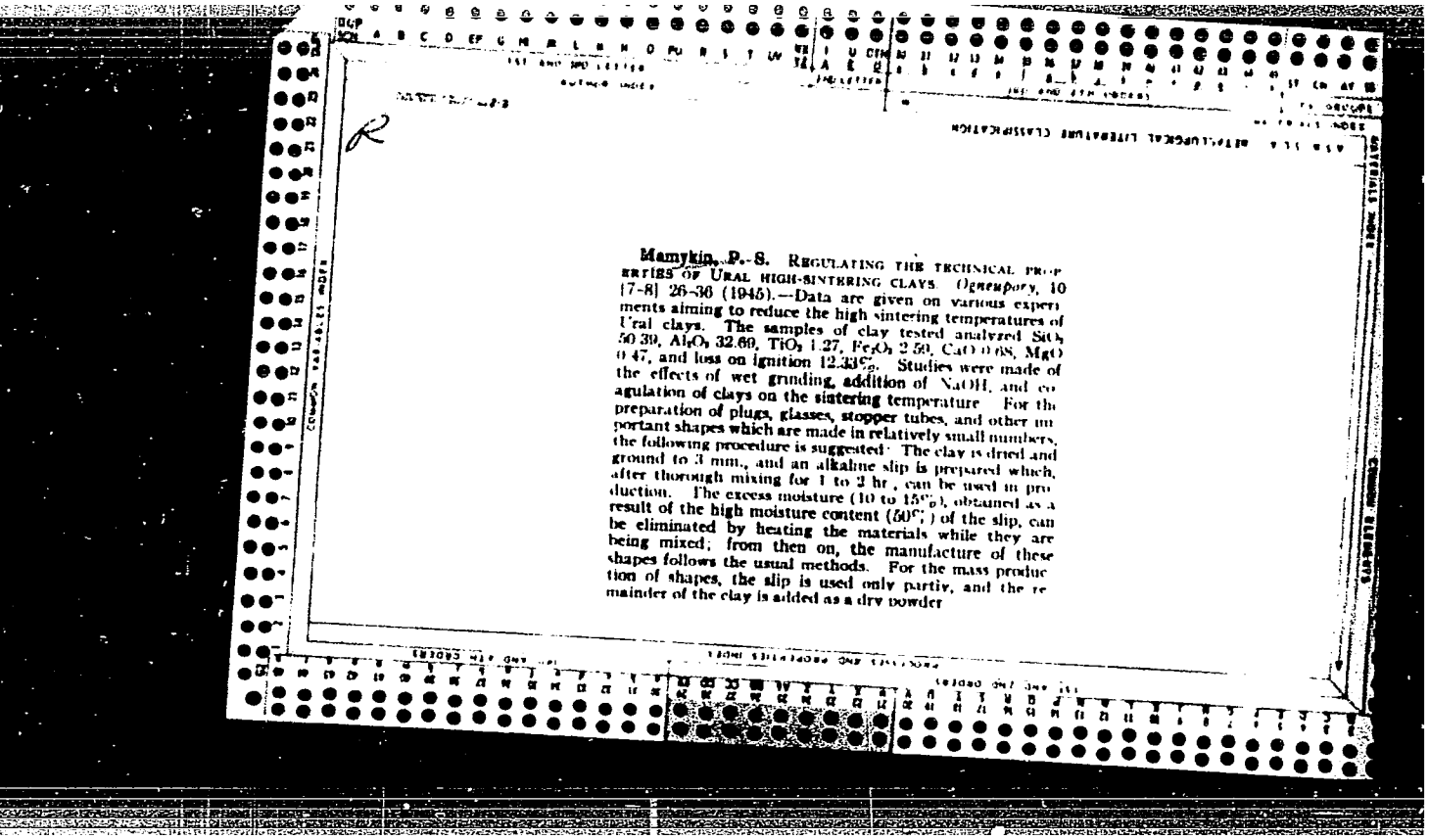
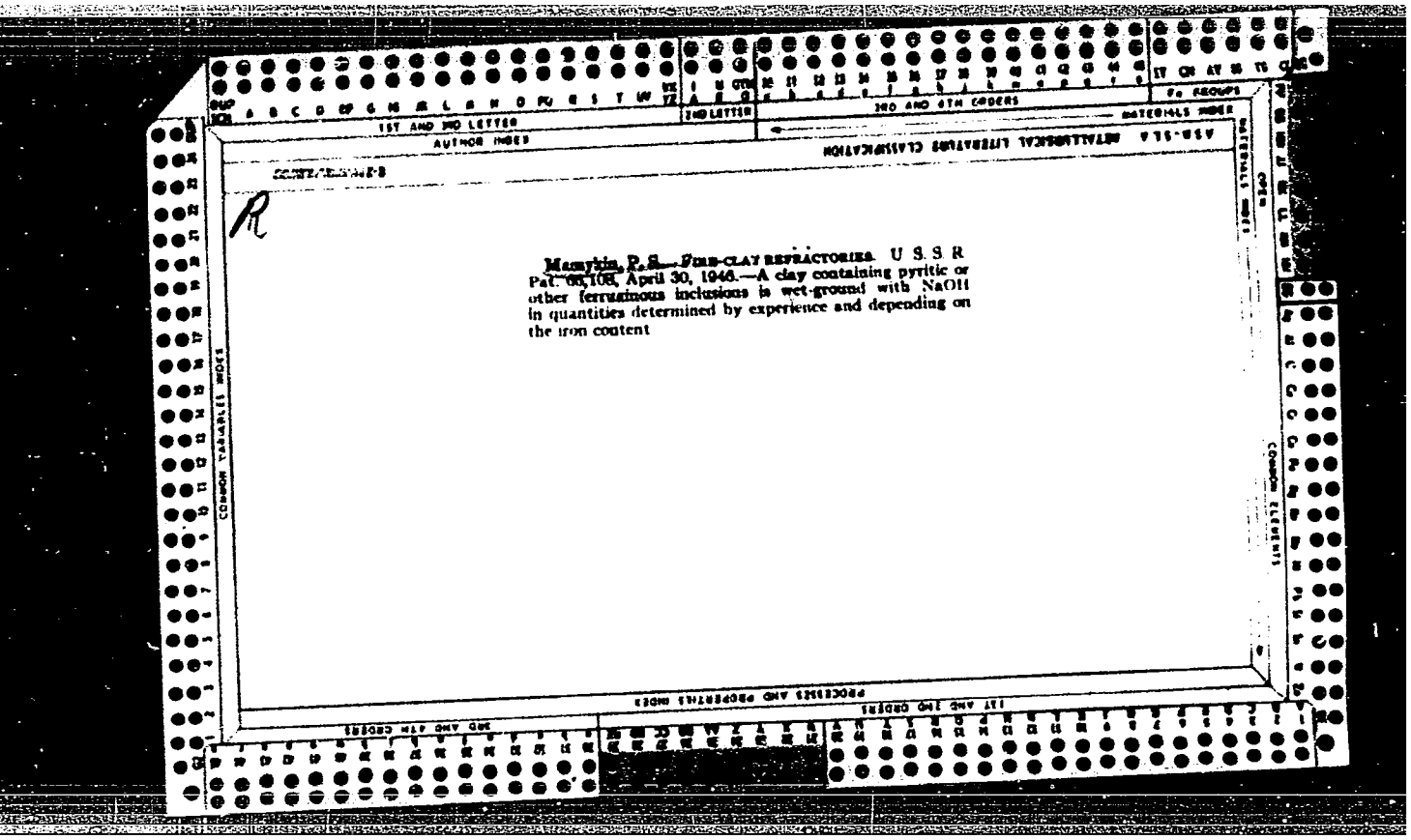
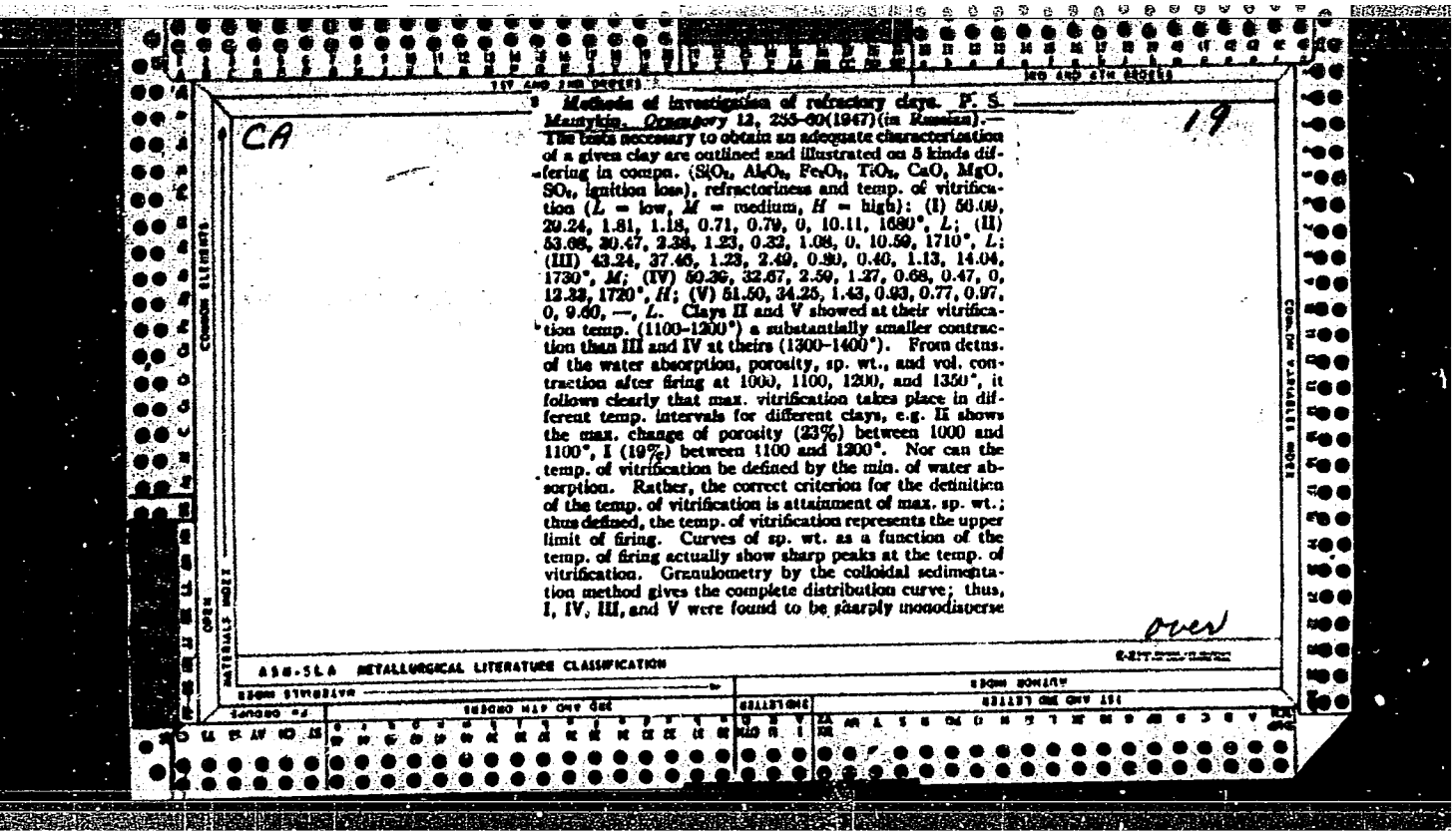


Mamykin, P. S. REGULATING THE TECHNICAL PROPERTIES OF URAL HIGH-SINTERING CLAYS. *Ogneupory*, 10 [7-8] 26-36 (1945).—Data are given on various experiments aiming to reduce the high sintering temperatures of Ural clays. The samples of clay tested analyzed SiO_2 50.39, Al_2O_3 32.69, TiO_2 1.27, Fe_2O_3 2.59, CaO 0.68, MgO 0.47, and loss on ignition 12.33%. Studies were made of the effects of wet grinding, addition of NaOH, and coagulation of clays on the sintering temperature. For the preparation of plugs, glasses, stopper tubes, and other important shapes which are made in relatively small numbers, the following procedure is suggested: The clay is dried and ground to 3 mm., and an alkaline slip is prepared which, after thorough mixing for 1 to 2 hr., can be used in production. The excess moisture (10 to 15%), obtained as a result of the high moisture content (50%) of the slip, can be eliminated by heating the materials while they are being mixed; from then on, the manufacture of these shapes follows the usual methods. For the mass production of shapes, the slip is used only partly, and the remainder of the clay is added as a dry powder.



Mamykin, P. S. FIRE-CLAY REFRACTORIES. U S S R Pat. 66,108, April 30, 1946.—A clay containing pyritic or other ferruginous inclusions is wet-ground with NaOH in quantities determined by experience and depending on the iron content



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Methods of investigation of refractory clays. P. S. Mazurkin. *Ogneupory* 12, 255-60(1947)(in Russian).—The tests necessary to obtain an adequate characterization of a given clay are outlined and illustrated on 5 kinds differing in compn. (SiO_2, Al_2O_3, Fe_2O_3, TiO_2, CaO, MgO, SO_3, ignition loss), refractoriness and temp. of vitrification (*L* = low, *M* = medium, *H* = high): (I) 56.09, 29.24, 1.81, 1.18, 0.71, 0.79, 0, 10.11, 1680°, *L*; (II) 53.68, 30.47, 2.38, 1.23, 0.32, 1.08, 0, 10.59, 1710°, *L*; (III) 43.24, 37.46, 1.23, 2.49, 0.30, 0.40, 1.13, 14.04, 1730°, *M*; (IV) 50.36, 32.67, 2.59, 1.27, 0.68, 0.47, 0, 12.32, 1720°, *H*; (V) 51.50, 34.25, 1.43, 0.93, 0.77, 0.97, 0, 9.60, —, *L*. Clays II and V showed at their vitrification temp. (1100–1200°) a substantially smaller contraction than III and IV at theirs (1300–1400°). From detns. of the water absorption, porosity, sp. wt., and vol. contraction after firing at 1000, 1100, 1200, and 1350°, it follows clearly that max. vitrification takes place in different temp. intervals for different clays, e.g. II shows the max. change of porosity (23%) between 1000 and 1100°, I (19%) between 1100 and 1200°. Nor can the temp. of vitrification be defined by the min. of water absorption. Rather, the correct criterion for the definition of the temp. of vitrification is attainment of max. sp. wt.; thus defined, the temp. of vitrification represents the upper limit of firing. Curves of sp. wt. as a function of the temp. of firing actually show sharp peaks at the temp. of vitrification. Granulometry by the colloidal sedimentation method gives the complete distribution curve; thus, I, IV, III, and V were found to be sharply monodisperse

over

(1, 1.5, 2, and 4 μ, resp.), II polydisperse. Dispersity does not appear to be a primary factor detg. the properties of a clay, since IV and V differ very strongly in plasticity and temp. of vitrification whereas I and II are very similar in that respect despite the distinct difference in granulometric compn. Differential thermal analysis permits prediction of certain tech. features: in the high-plastic, (strong-bonding and low-vitrifying II and V, the exothermal effect above 900° is either absent or very weak; the max. at 950° is distinctly present in the low-plastic high-vitrifying IV; while an endothermal effect between 600 and 670° is common to all typical clays, the addnl. min. at 300° observed in III evidently corresponds to the presence of Al hydrates detg. its high contraction on firing. Another very highly plastic Irkutsk clay, SiO_2 67.38, Al_2O_3 19.08, Fe_2O_3 2.04, CaO 0.97, MgO 2.48, ignition loss 6.28, unsuitable for manuf. because of cracking on drying, showed only a faint endothermal min. at 650° but a very pronounced one at 160°; such effects at low temps. may be due to montronite or to adsorbed H_2O. Detns. of pH by the method of G. Barker and B. Truog (*C.A.* 37, 2149°) gave: I 7.25, II 7.24, V 7.19, IV 5.91, III 5.67, as against pH 4.06–6.50 for the American clays of B. and T.; evidently, high-plastic, low-vitrifying clays are characterized by pH over 7, low-plastic high-vitrifying clays, by pH less than 7.

N. Thon

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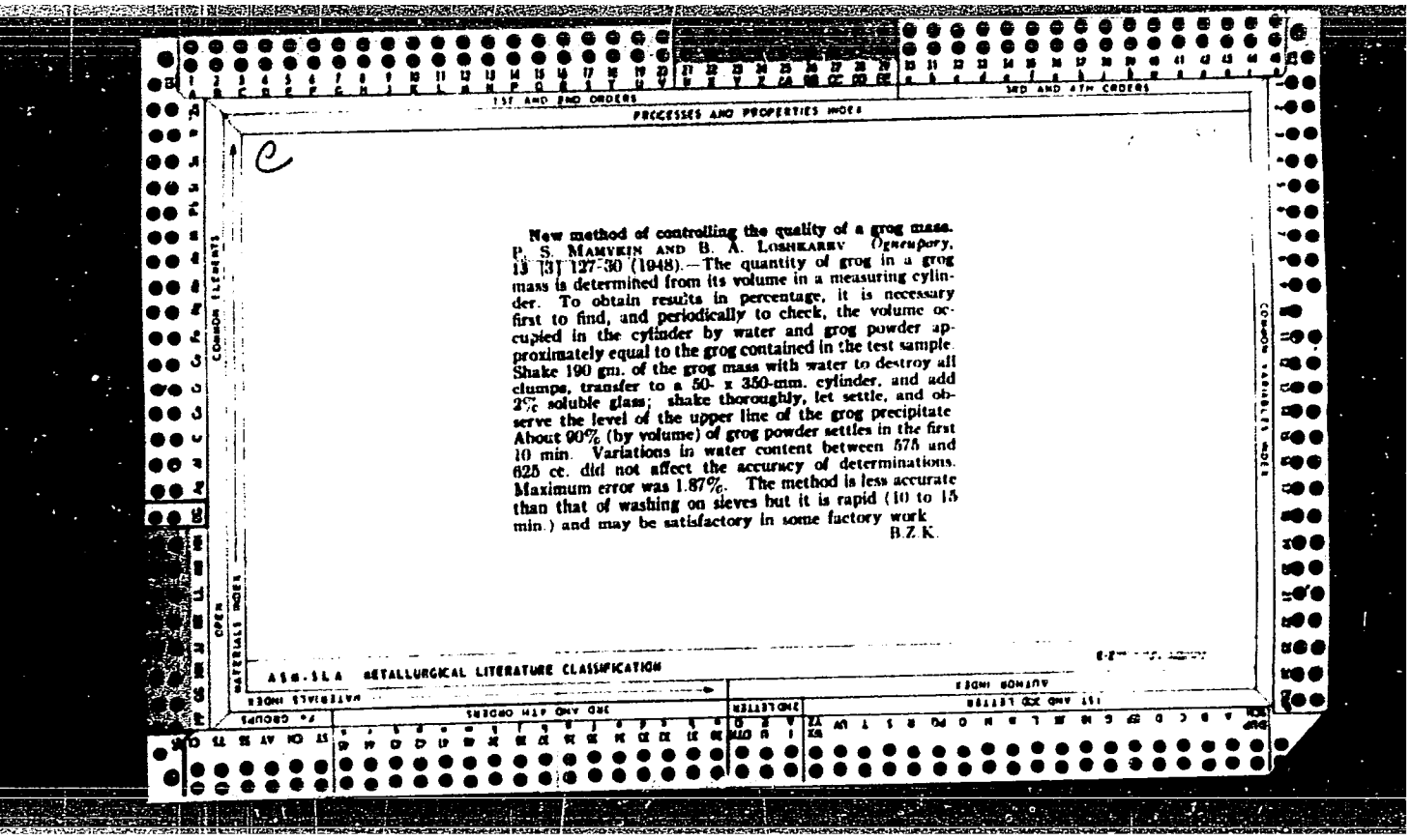
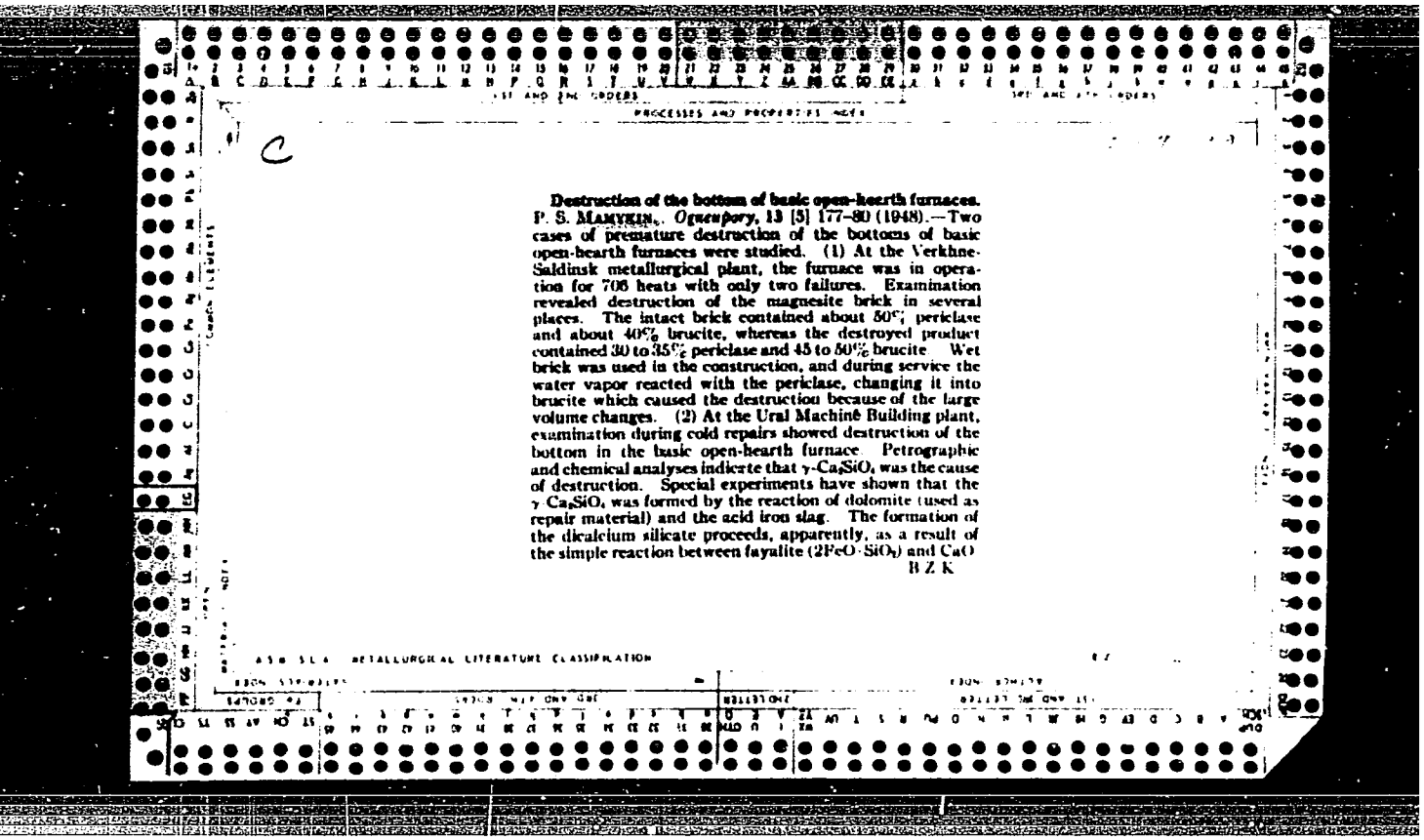
Thermal stability of refractories in general and of those from chromite and magnesite in particular. P. S. Mamykin. *Ogneupory* 12, 405–10(1947).—Critique of paper by Panarin (*C.A.* 41, 1074c). The thermal stability of ceramic products is equally affected by the coeff. of thermal expansion and the moduli of elasticity and rigidity. Heat-resistant materials can be classed in the following 3 groups: (1) materials, such as quartz glass, the heat resistance of which is detd. by a natural, low coeff. of thermal expansion; neither the macrostructure nor the binder is of significance for their heat resistance; (2) materials, such as bricks Radex A and B, the heat resistance of which is detd. by a low modulus of rigidity and a high coeff. of thermal expansion; even nuances of macrostructure can affect significantly their heat resistance; (3) materials, such as carbonaceous, coke oven, and SiC refractories, the heat resistance of which is detd. by both low modulus of elasticity and low coeff. of thermal expansion. B. Z. K.

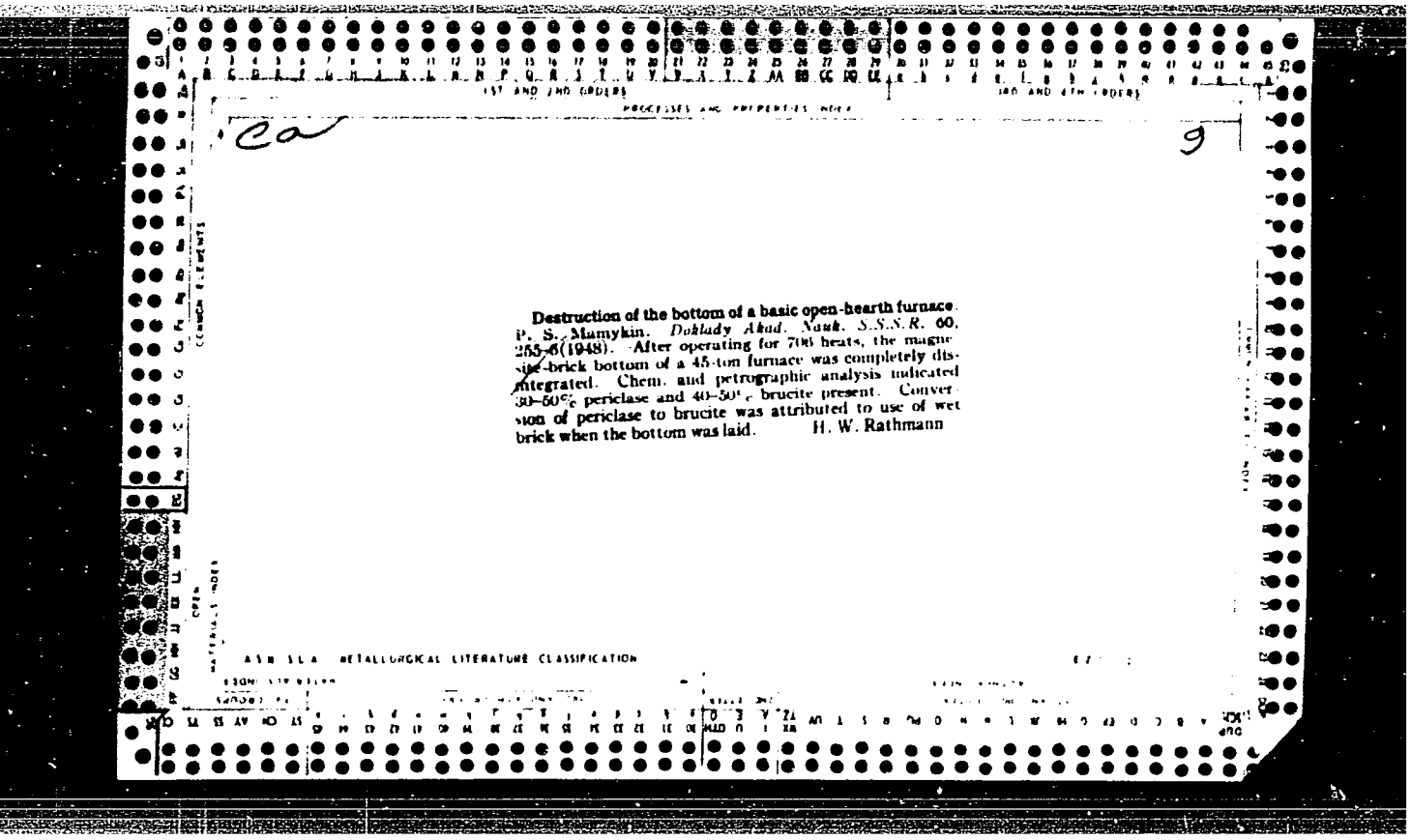


New method of controlling the quality of a grog mass. P. S. Mamykin and B. A. Loshkarev *Ogneupory*, 13 [3] 127-30 (1948).—The quantity of grog in a grog mass is determined from its volume in a measuring cylinder. To obtain results in percentage, it is necessary first to find, and periodically to check, the volume occupied in the cylinder by water and grog powder approximately equal to the grog contained in the test sample. Shake 190 gm. of the grog mass with water to destroy all clumps, transfer to a 50- x 350-mm. cylinder, and add 2% soluble glass; shake thoroughly, let settle, and observe the level of the upper line of the grog precipitate. About 90% (by volume) of grog powder settles in the first 10 min. Variations in water content between 575 and 625 cc. did not affect the accuracy of determinations. Maximum error was 1.87%. The method is less accurate than that of washing on sieves but it is rapid (10 to 15 min.) and may be satisfactory in some factory work.
B.Z.K.

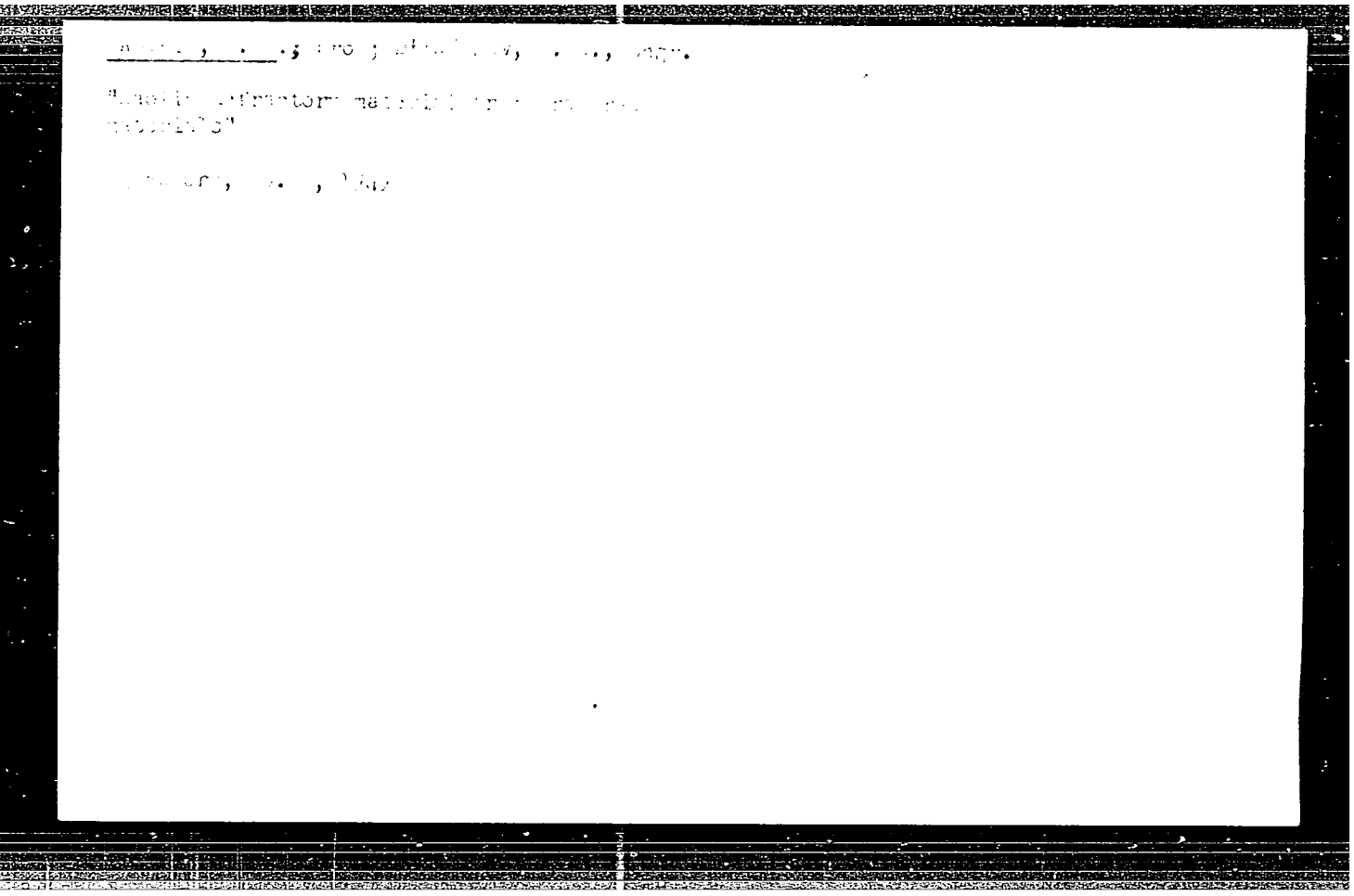


Destruction of the bottom of basic open-hearth furnaces. P. S. MARYUKIN. *Ogneupory*, 13 [5] 177–80 (1948).—Two cases of premature destruction of the bottoms of basic open-hearth furnaces were studied. (1) At the Verkhne-Saldinsk metallurgical plant, the furnace was in operation for 706 heats with only two failures. Examination revealed destruction of the magnesite brick in several places. The intact brick contained about 50% periclase and about 40% brucite, whereas the destroyed product contained 30 to 35% periclase and 45 to 50% brucite. Wet brick was used in the construction, and during service the water vapor reacted with the periclase, changing it into brucite which caused the destruction because of the large volume changes. (2) At the Ural Machine Building plant, examination during cold repairs showed destruction of the bottom in the basic open-hearth furnace. Petrographic and chemical analyses indicate that γ-Ca_2SiO_4 was the cause of destruction. Special experiments have shown that the γ-Ca_2SiO_4 was formed by the reaction of dolomite (used as repair material) and the acid iron slag. The formation of the dicalcium silicate proceeds, apparently, as a result of the simple reaction between fayalite ($2FeO \cdot SiO_2$) and CaO.

B Z K



Destruction of the bottom of a basic open-hearth furnace. P. S. Mamykin. *Doklady Akad. Nauk. S.S.S.R.* 60, 265–6(1948). After operating for 700 heats, the magnesite-brick bottom of a 45-ton furnace was completely disintegrated. Chem. and petrographic analysis indicated 30–60% periclase and 40–50% brucite present. Conversion of periclase to brucite was attributed to use of wet brick when the bottom was laid. H. W. Rathmann



MAMYKIN, P. S.

29085-O Steklokeramike Kak Ogneupornom Matoriale /V Svyazi So Stat'ey V. V. Goncharova ((O Steklokeramike Kak Ogneupornom Materiale)) V Zhurn. ((Ogneupory)), 1949, No.4 /Ogneupory, 1949 No. 9 S, 379-93

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

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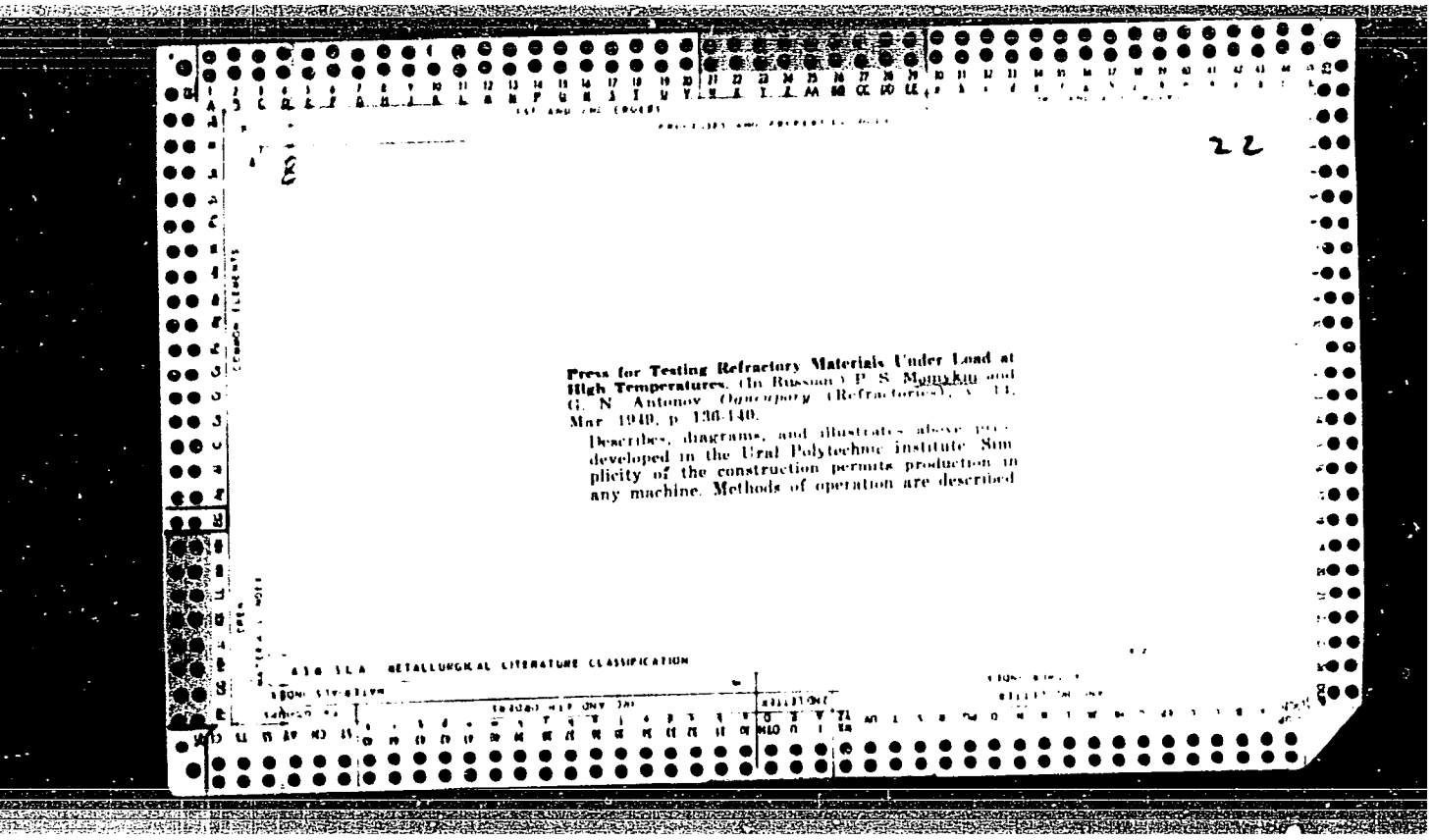
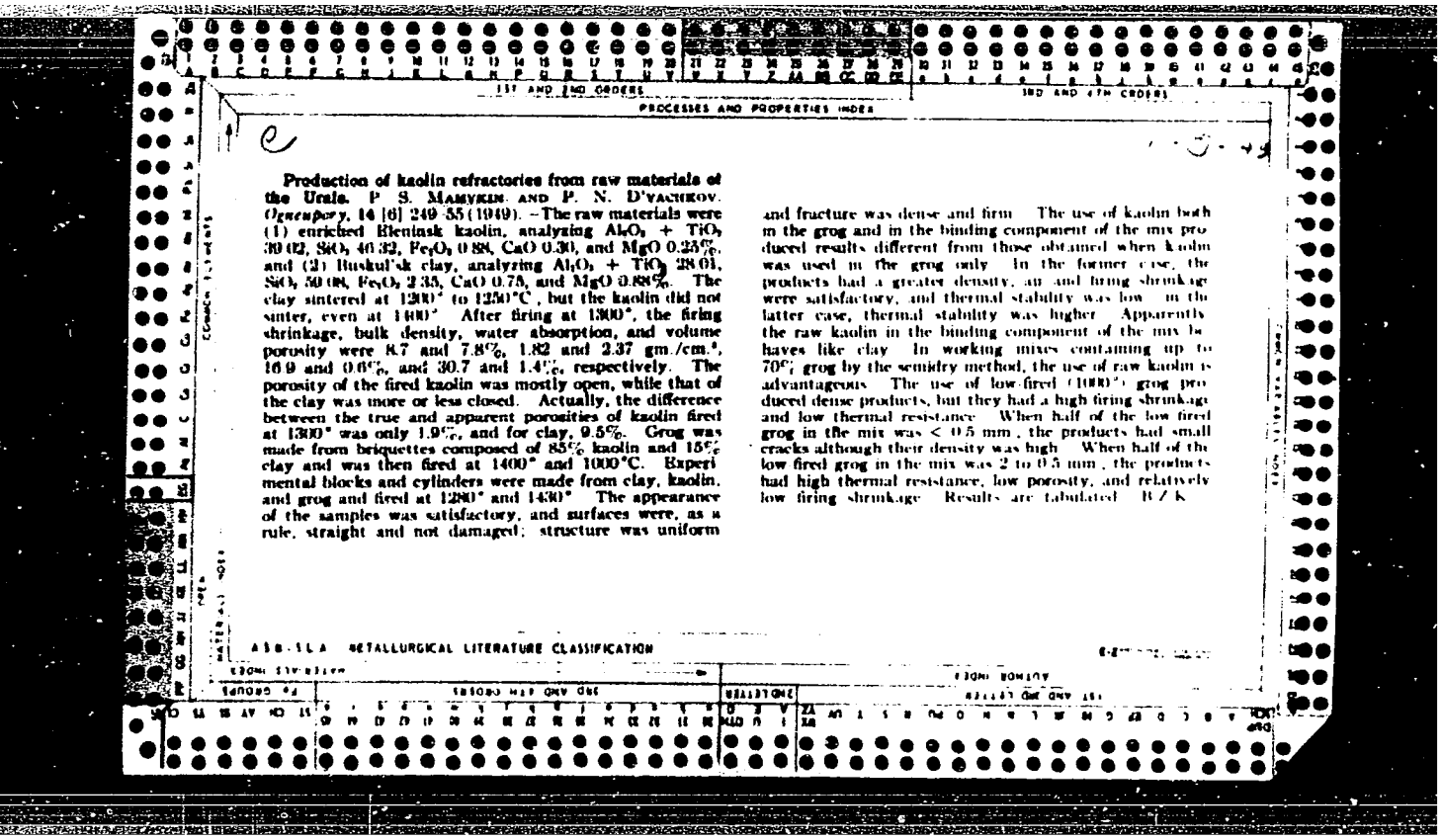


Press for Testing Refractory Materials Under Load at High Temperatures. (In Russian.) P. S. Mamykin and G. N. Antonov. *Ogneupory* (Refractories), v. 11, Mar 1940, p. 136-140.

Describes, diagrams, and illustrates above press developed in the Ural Polytechnic Institute. Simplicity of the construction permits production in any machine. Methods of operation are described



1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Production of kaolin refractories from raw materials of the Urals. P. S. Mamykin and P. N. D'yachkov. *Ogneupory*, 14 [6] 249–55 (1949). – The raw materials were (1) enriched Blenitsk kaolin, analyzing Al_2O_3 + TiO_2 39.02, SiO_2 46.32, Fe_2O_3 0.88, CaO 0.30, and MgO 0.25%, and (2) Ruskul'sk clay, analyzing Al_2O_3 + TiO_2 28.01, SiO_2 50.08, Fe_2O_3 2.35, CaO 0.75, and MgO 0.88%. The clay sintered at 1200° to 1250°C., but the kaolin did not sinter, even at 1400°. After firing at 1300°, the firing shrinkage, bulk density, water absorption, and volume porosity were 8.7 and 7.8%, 1.82 and 2.37 gm./cm.^{3}, 16.9 and 0.6%, and 30.7 and 1.4%, respectively. The porosity of the fired kaolin was mostly open, while that of the clay was more or less closed. Actually, the difference between the true and apparent porosities of kaolin fired at 1300° was only 1.9%, and for clay, 9.5%. Grog was made from briquettes composed of 85% kaolin and 15% clay and was then fired at 1400° and 1000°C. Experimental blocks and cylinders were made from clay, kaolin, and grog and fired at 1280° and 1430°. The appearance of the samples was satisfactory, and surfaces were, as a rule, straight and not damaged; structure was uniform and fracture was dense and firm. The use of kaolin both in the grog and in the binding component of the mix produced results different from those obtained when kaolin was used in the grog only. In the former case, the products had a greater density, air and firing shrinkage were satisfactory, and thermal stability was low; in the latter case, thermal stability was higher. Apparently the raw kaolin in the binding component of the mix behaves like clay. In working mixes containing up to 70% grog by the semidry method, the use of raw kaolin is advantageous. The use of low-fired (1000°) grog produced dense products, but they had a high firing shrinkage and low thermal resistance. When half of the low fired grog in the mix was < 0.5 mm., the products had small cracks although their density was high. When half of the low fired grog in the mix was 2 to 0.5 mm., the products had high thermal resistance, low porosity, and relatively low firing shrinkage. Results are tabulated. B / K

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Glass-cemented ceramic materials as refractories. P. S. Mamykin. *Ogneupory* 14, 388-402(1949).—Theoretical assumptions are discussed. The glass-cementing ceramic method is substantially inferior to the methods of (1) collective recrystn. which is used frequently in making refractories from pure oxides (especially Al_2O_3) and (2) "active components" which proved successful in various cases, particularly in the production of stabilized dolomite brick. The method of glass-cementing ceramics has a limited role; it may be of value in the technology of fine ceramic ware. 12 references.

R. Z. K.

MAKSIN, [illegible]

Furnaces, [illegible], and kilns in [illegible] plants; a textbook. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1950. 512 p. (51-38379)

TN677.M3

USSR/Engineering - Refractories May 50

"Calcium Titanates and Kinetics of Their Formation," P. S. Mamykin, B. A. Loshkarev, Cand Tech Sci, Ural Ind Inst 6½ pp

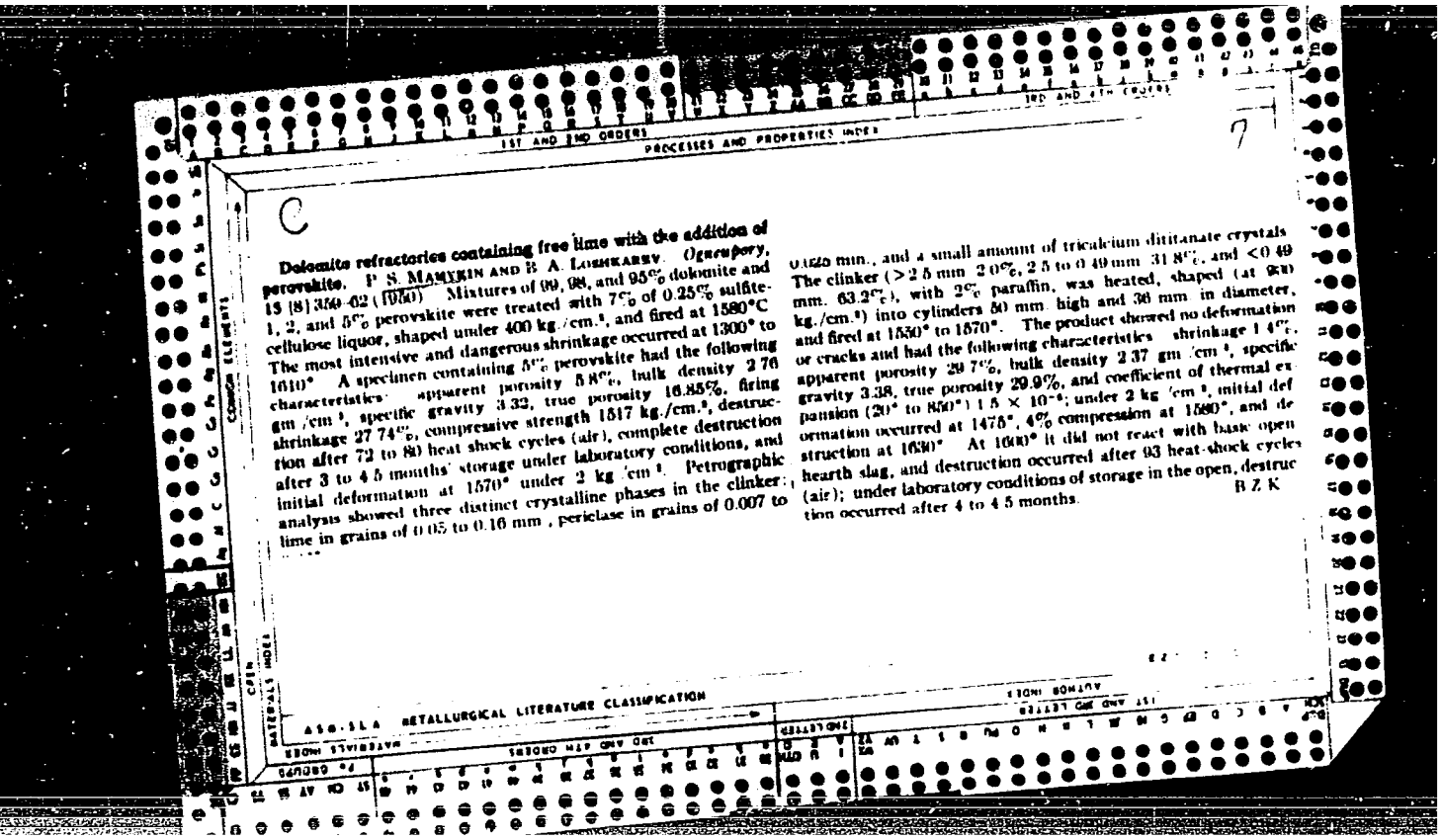
"Ogneupory" No 5

Describes physicochemical investigation of methods for producing refractories of $CaO-TiO_2$ system. Studied formation reactions of calcium titanates in mixtures of chalk and amorphous titanium dioxide, both chemically pure. Nature of calcium titanates formed was additionally investigated by petrographic

analysis of thin sections. Experimentally established lower temperature for beginning of reaction between CaO and TiO_2 at about 500°C.

160T32

MAMYKIN, P. S.



C

Dolomite refractories containing free lime with the addition of perovskite. P. S. MAMYKIN AND B. A. LOSHKAREV. *Ogneupory*, 15 [8] 359–62 (1950). Mixtures of 99, 98, and 95% dolomite and 1, 2, and 5% perovskite were treated with 7% of 0.25% sulfite-cellulose liquor, shaped under 400 kg./cm.², and fired at 1580°C. The most intensive and dangerous shrinkage occurred at 1300° to 1610°. A specimen containing 5% perovskite had the following characteristics: apparent porosity 5.8%, bulk density 2.76 gm./cm.³, specific gravity 3.32, true porosity 16.85%, firing shrinkage 27.74%, compressive strength 1517 kg./cm.², destruction after 72 to 80 heat shock cycles (air), complete destruction after 3 to 4.5 months' storage under laboratory conditions, and initial deformation at 1570° under 2 kg./cm.². Petrographic analysis showed three distinct crystalline phases in the clinker: lime in grains of 0.05 to 0.16 mm., periclase in grains of 0.007 to 0.020 mm., and a small amount of tricalcium dititanate crystals. The clinker (>2.5 mm. 2.0%, 2.5 to 0.49 mm. 31.8%, and <0.49 mm. 63.2%), with 2% paraffin, was heated, shaped (at 900 kg./cm.²) into cylinders 50 mm. high and 36 mm. in diameter, and fired at 1530° to 1570°. The product showed no deformation or cracks and had the following characteristics: shrinkage 1.4%, apparent porosity 29.7%, bulk density 2.37 gm./cm.³, specific gravity 3.38, true porosity 29.9%, and coefficient of thermal expansion (20° to 850°) 1.5×10^{-6}; under 2 kg./cm.², initial deformation occurred at 1475°, 4% compression at 1580°, and destruction at 1630°. At 1600° it did not react with basic open hearth slag, and destruction occurred after 93 heat-shock cycles (air); under laboratory conditions of storage in the open, destruction occurred after 4 to 4.5 months. B. Z. K.

C.A.

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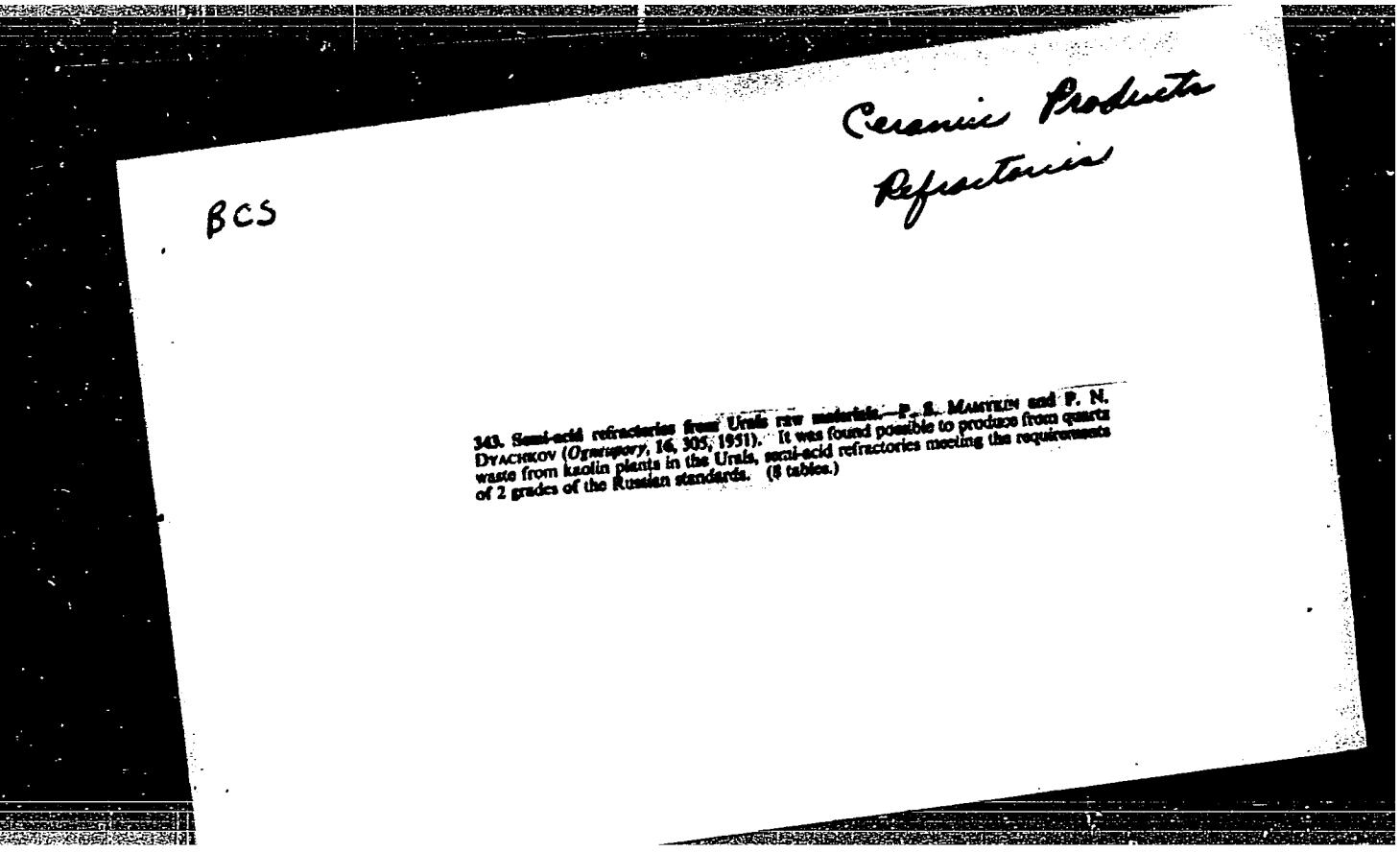
Properties of calcium titanates and refractory shapes made from them P. S. Mamykin and B. A. Loshkarev (Ural'sk Polytech. Inst.) *Ogneupory* 16, 218–20(1951); cf. *C.A.* 45, 9685*f*.—Clinkers were made from CaO and TiO_2 with CaO/TiO_2 ratios of 1:1, 3:2, 2:1, and 3:1; firing temps. were up to 1600°. In the 2:1 and 3:1 clinkers, the CaO above that required to bind the TiO_2 in $3CaO.2TiO_2$ was in a free state or was not bound in any form. The 1:1 and 3:2 clinkers hydrated very little, but the 3:2 clinker showed a tendency toward deformation during firing. From a technological viewpoint, the 1:1 clinker is considered optimum. Shapes of $CaO.TiO_2$ and $3CaO.2TiO_2$ were made of 85% clinkers and 15% bond ($CaCO_3$ and TiO_2) and fired at 1580°. Resistance against portland cement clinker was good and against basic open-hearth slags satisfactory. Shapes showed no contact with materials contg. SiO_2 and Al_2O_3. Curves of deformation under load at high temps. showed a plastic nature. All other properties were within the limits characteristic of other highly refractory materials. B. Z. K.



BCS

Ceramic Products
Refractories

343. Semi-acid refractories from Urals raw materials.—P. S. Mantsev and P. N. Dyachkov (*Ogneupory*, 16, 305, 1951). It was found possible to produce from quartz waste from kaolin plants in the Urals, semi-acid refractories meeting the requirements of 2 grades of the Russian standards. (8 tables.)

MAMYKIN, P. S.

USSR/Engineering - Refractories, Processes 11 Oct 51

"Sublimates on Heating Silicates in Reducing Atmosphere," P. S. Mamykin, P. V. Gel'd and N. N. Buynov

"Dok Ak Nauk SSSR" Vol LXXX, No 5, pp 801-804

Investigates phenomenon of pneumatological transfer of silica during high-temp firing of silicates. Reviews several cases of silica sublimation and discusses expts of firing crucibles made of carborundum fire clay mixt at 1,500° C. Presents several micrographs obtained with electron microscope. Submitted by Acad D. S. Belyankin 15 Aug 51.

221T43

USSR/Engineering - Refractories, Magnesite, Technology — Jul 52

"On the Methods for Rational Fabrication of Magnesite High-Refractory Products on the Basis of Materials From Satka Deposit," Dr P.S. Mamykin, Prof, Ural Polytech Inst imeni Kirov

"Ogneupory" No 7, pp 291-297

Reviews article by A.P. Panarin published in "Ogneupory" No 1, 1952. Chief shortcoming of work is absence of direct tests of magnesites for slag resistance which should be considered as leading property of magnesite refractories. Discusses

220T45

type of furnace for burning, temp of burning, cause of pressure cracks and rejects concept of "active oxides" in metallurgical magnesite.

220T45

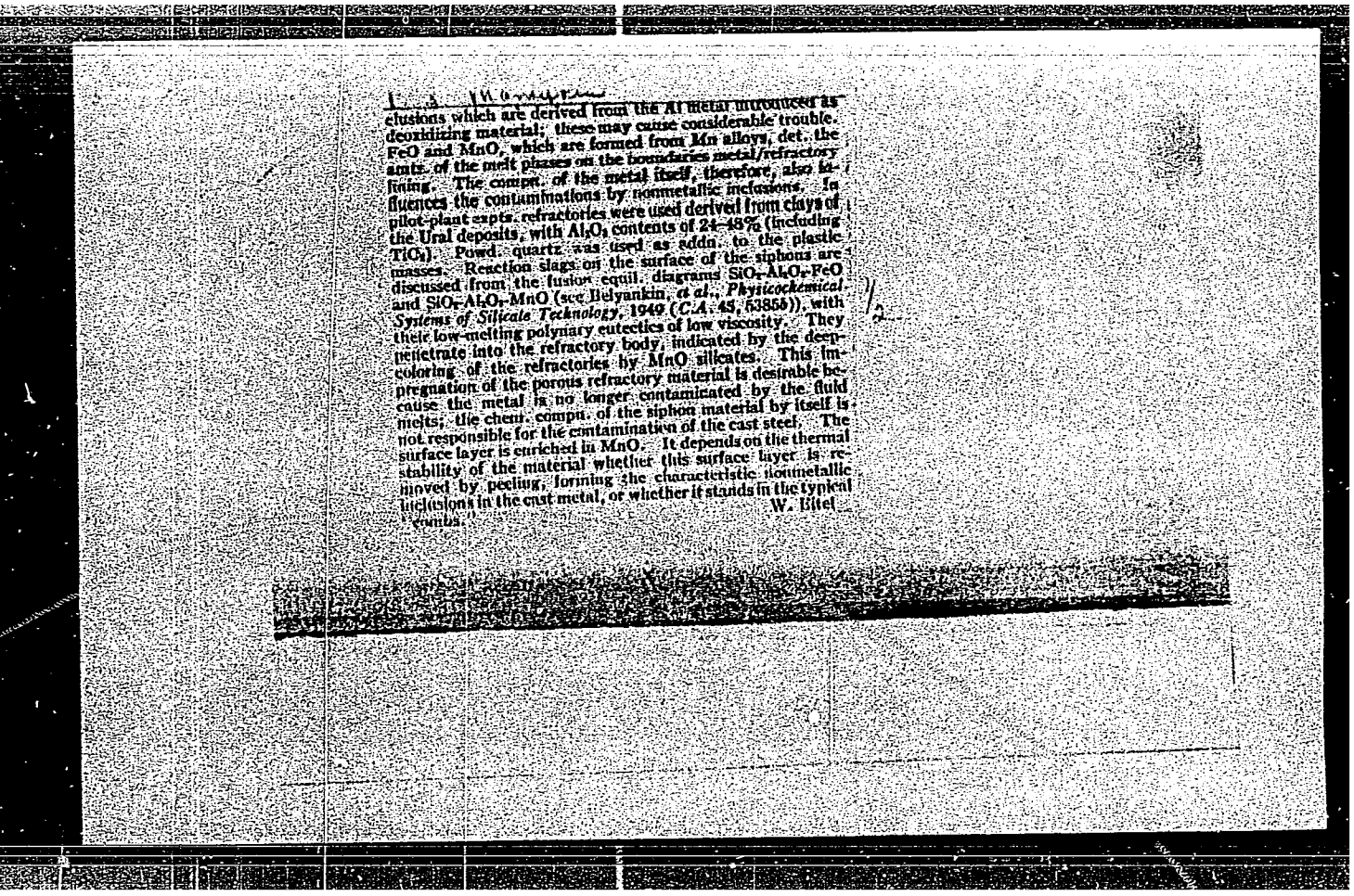
MAMYKIN, P. S., Dr.

MAMYKIN, P.S.

USSR.

Nonmetallic inclusions as a function of the composition and of the properties of the refractory material of the siphons in steel casting. P. S. Mamykin and S. G. Zlatkin. *Vestnik Metal. i Mashinostroy. Akad. Nauk S.S.S.R.* 2, 271-80 (1963).—Refractories used as runner brick in steel casting must have, in the first place, a high thermal resistivity, and every attempt to improve these materials must consider an increase in thermal shock resistance. The refractories of the runner bricks are important in the contamination of the metal by silicate inclusions. The ingots also contain in-

(over)



clusions which are derived from the Al metal introduced as deoxidizing material; these may cause considerable trouble. FeO and MnO, which are formed from Mn alloys, det. the amts. of the melt phases on the boundaries metal/refractory lining. The compn. of the metal itself, therefore, also influences the contaminations by nonmetallic inclusions. In pilot-plant expts. refractories were used derived from clays of the Ural deposits, with Al_2O_3 contents of 24–48% (including TiO_2). Powd. quartz was used as addn. to the plastic masses. Reaction slags on the surface of the siphons are discussed from the fusion equil. diagrams SiO_2-Al_2O_3-FeO and SiO_2-Al_2O_3-MnO (see Belyankin, *et al.*, *Physicochemical Systems of Silicate Technology*, 1949 (*C.A.* 45, 5385b)), with their low-melting polynary eutectics of low viscosity. They penetrate into the refractory body, indicated by the deep-coloring of the refractories by MnO silicates. This impregnation of the porous refractory material is desirable because the metal is no longer contaminated by the fluid melts; the chem. compn. of the siphon material by itself is not responsible for the contamination of the cast steel. The surface layer is enriched in MnO. It depends on the thermal stability of the material whether this surface layer is removed by peeling, forming the characteristic nonmetallic inclusions in the cast metal, or whether it stands in the typical "combs."

W. Bitel

MAMYKIN, P.S., prof. doktor; D'YACHKOV, P.N., inzh.

Magnesite wastes from the Shabrovskiy talcum mine used as raw material for the manufacture of refractories. Ogneupory 18 no.2:69-76 F '53. (MIRA 11:10)

1.Ural'skiy p 'tekhnicheskiy institut im. S.M. Kirova.
(' brovskiy--Magnesite) (Refractory materials)

MAMYKIN, P.S.

Processes in the manufacture of chromite-magnesite refractories and improvement of their quality. Ogneupory 18 no.6:243-[illegible] Je '53. (MIRA 11:10)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova.
(Refractories industry--Quality control)

OGARKOV, A.F., inzh.; MAMYKIN, P.S., prof., doktor

Porosity and gas permeability of grog refractories depending on the original clay and the method of their manufacture. Ogneupory 18 no.8:345-356 '53. (MIRA 11:10)
(Refractory materials--Testing)

MAMYAKIN, Petr Sergeyevich; BRON, V.A., redaktor; LUCHKO, Yu.V., redaktor; KOVALENKO, N.I., tekhnicheskiy redaktor

[Refractory articles; their properties, mamufacture technology and use in industrial furances] Ogneupornye izdeliia; svoistva, tekhnologiia izgotovleniia i sluzhba v promyshlennykh pechakh. Sverdlovsk, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii Sverdlovskoe otd-nie, 1955. 487 p. (MLRA 8:9)
(Refractory materials)

Translation from: Referativnyy zhurnal. Metallurgiya, 1956, N. 2, p 12 (USSR)

AUTHOR: Mamykin, P.S.

TITLE: The Physicochemical Processes Occurring in Refractories Under Conditions of Operational Use in Nonferrous Metallurgy (Fiziko-khimicheskiye protsessy, protekayushchiye v ogneuporakh v usloviakh sluzhby v tsvetnoy metallurgii)

PERIODICAL: V sb.: Fiz.-khim. osnovy keramiki Moscow, Promstroyizdat, 1956, pp 561-574

ABSTRACT: Attention is given to the changes that occur in refractories (Dinas brick, magnesite-chromite, chrome-magnesite, magnesite-forsterite, and chamotte materials) during their use in copper-smelting, reverberatory, and refining furnaces, in the lining of converters for copper mattes, in rotary furnaces for sintering and calcining Al_2O_3, electric furnaces for the purification of Al, retorts for distilling Zn, and in furnaces for extracting Pb from crude lead. General formulas are given for determining the degree of activity of the slag components, the time required for the refractory substance to dissolve in the slag, and the angle at which the refractory is wetted by the slag Bibliography 14 refs S.G.

Card 1/1

1. Refractory materials—Physical factors 2. Refractory materials—Operation 3. Refractory materials—Test methods 4. Refractory materials—Test results

МАМЫКИН, П. С.

USSR /Chemical Technology. Chemical Products and Their Application I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31572

Author : Ogarkov A. F., Mamykin P.S.

Title : Apparatus for the Determination of Resilient Expansion of Moldings Produced from Refractory Pastes

Orig Pub: Ogneupory, 1956, No 6, 274-276

Abstract: Description of an apparatus for the determination of resilient expansion of moldings (M) made from semi-dry, refractory pastes. It consists of a steel mold in which the paste is compressed by a dropping plunger which slides over three rods. Descent of the plunger is

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USSR /Chemical Technology. Chemical Products and Their Application I-12

Silicates. Glass. Ceramics. Binders.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31572

measured by means of an indicator arm with an accuracy within 0.01 mm. Height of the M in the mold, after removal of the plunger, is measured by means of a micrometric depth-meter, and after it has been removed from the mold, with an ordinary micro-meter. Resilient expansion of the M is the difference in its height following compression and after pressure has been removed.

Card 2/2

MAMYKIN, P.S.; ZLATKIN, S.G.; ZHUKOVSKIY, G.V.

The preparation of Ural mountain refradtory clays. Ogneupory 21 no.8:376-377 '56. (MLRA 10:2)

1. Ural'skiy Politekhnicheskiy institut imeni S.M.Kirova (for Mamykin and Zlatkin). 2. Institut Uralmekhanobr (for Zhukovskiy).
(Ural Mountain region--Clays)

MAMYKIN, P.

GUR'IEV, F., kand. tekhn. nauk; MAMYKIN, P., prof., doktor tekhn. nauk.

Freezing as applied to bricks. Stroi. mat. 3 no.12:29 D '57.
(Bricks--Testing) (MIRA 11:2)

MAMYRIN, B.S.

7511. Effect of body moisture and making pressure on compaction of raw material and [illegible] products containing grog. A. P. Ozarkov and B. S. Mamyrin (Ogneupory, 22, 178, 1957). In Russian. Bodies prepared from 50% clay and 50% grog were mixed for 12 min and test cylinders (dia. 50 mm, ht. 40 mm) were made in a hand press at 150, 250, 400 and 800 kg/cm², the body moistures being 4.5, 6.4, 8, 9.8 and 12%. Increased making pressure improved textural and mechanical properties and reduced porosity and gas permeability. Increase in moisture up to a known limit at a given pressure gave denser, stronger and less permeable (to gas) raw material and finished products. Beyond this limit increase in moisture content hinders packing and may result in products of greater porosity. (7 figs., 5 tables.)

OGARKOV, A.F.; MAMYKIN, P.S.

Elastic dilatation of clay and grog mixtures in stiff-mud compression.
Ogneupory 22 no.9:398-406 '57. (MIRA 10:11)

1. Ural'skiy politekhnicheskiy institut im. S.M. Kirova.
(Pressed brick--Testing) (Refractory materials)

MAWYKIN, P.S., prof.

High-duty refractories for present-day metallurgy. Khim. nauka i prom. 3 no.1:27-34 '58. (MIRA 11:3)
(Refractory materials)

AUTHORS: Mamykin, P. S., Semkina, N.V 30V/131-58-7-8/14

TITLE: The Influence of Hydrothermal Treatment of Clays of the Bogdanovichskoye Deposit on Some of Their Properties (Vliyaniye gidrotermal'noy obrabotki glin bogdanovichskogo mestorozhdeniya na nekotoryye ikh svoystva)

PERIODICAL: Ogneupory, 1958, Nr 7, pp 325 - 326 (USSR)

ABSTRACT: This paper investigates the influence of such a treatment on the properties of the clay of the Mezhnikovskaya and Poldnevskaya beds of the Bogdanovichskoye deposit. The percentile chemical composition of the two types of clay is mentioned in table 1. The Mezhnikovskaya clay has a satisfactory plasticity and binding quality and can be used for the production of chamotte products. The Poldnevskaya clay has less plasticity and represents a baking clay. It is difficult to obtain products from it by means of the plastic or semi-dry method The hydrothermal treatment was carried out as follows: the pressure in the autoclave was increased up to 8 atmospheres excess pressure in the course of 2 hours, and then it was again reduced to zero in the course of the next 2 hours. The whole cycle of the

Card 1/2

The Influence of Hydrothermal Treatment of Clays of the Bogdanovichskoye Deposit on Some of Their Properties SOV/131-58-7-8/14

hydrothermal treatment lasted 12 hours. The temperature in the autoclave amounted to from 160 to 170° in the case of the highest pressure. Then the production of the different sample products was described. The changes in the quality of the clay after its treatment are given in table 2. As may be seen, the plasticity increased and the baking temperature dropped. In some cases such a treatment can be considered useful as regards technological aspects. There are 2 tables and 3 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S.M. Kirova (Ural Polytechnical Institute imeni S. M. Kirov)

1. Clays--Processing 2. Clays--Properties 3. Clays--Applications

Card 2/2

MAMYKIN, P.S.; MELEKHOVA, T.F.

Talc as raw material in the production of forsterite refractories. Izv.Sib.otd. AN SSSR no.9:75-87 '58. (MIRA 11:11)

1. Zapadno-Sibirskiy filial AN SSSR.
(Forsterite) (Uderayskiy District--Talc)

15(6);25(1) PHASE I BOOK EXPLOITATION SOV/3246

Mamykin, Petr Sergeyevich, and Konstantin Konstantinovich Strelov

Tekhnologiya ogneuporov (Production of Refractories) Sverdlovsk, Metallurgizdat, 1959. 446 p. Errata slip inserted. 6,800 copies printed.

Ed.: I. P. Bas'yas; Ed. of Publishing House: N. N. Tsymbalist; Tech. Ed.: Ye. M. Zef.

PURPOSE: This textbook is intended for the course, Production of Refractories, given at tekhnikums. It may also be useful for students of schools of higher technical education and technical personnel in refractory-producing and metallurgical plants.

COVERAGE: The book deals with the more important refractory materials and their physicochemical properties. Equipment and machinery used in refractory production is described, and an explanation of the principles employed is given. The manufacture of refractories made of Dinas silica, aluminosilicates, magnesite, chromite-magnesite, forsterite, dolomite, carboniferous

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materials, and some light-weight materials is discussed. Information is given on refractory mortars, solutions, concretes, and glazes used in high-temperature service. Examples of design calculations and data on refractory wear are also included. Reference is made in the Introduction to a doctoral dissertation submitted by A. S. Berezhnoy. There are 20 references, all Soviet.

TABLE OF CONTENTS:

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15(2)

AUTHORS: Mamykin, P. S., D'yachkov, P. N. SOV/131-59-1-5/12

TITLE: Types of Clay of the Arkalykskoye Deposit and Their Use (Gliny Arkalykskogo mestorozhdeniya i ikh ispol'zovaniye)

PERIODICAL: Ogneupory, 1959, Nr 1, pp 26 - 33 (USSR)

ABSTRACT: In the present article the authors reported on the testing results of 530 sectional and 10 prospecting samples taken by the Turgayskaya ekspeditsiya Karagandinskogo geologorazvedochnogo upravleniya (Turgayskaya Expedition of the Karagandinskoye Administration for Geological Prospecting) (Tables 1, 2 and 3). The Arkalykskoye deposit is situated 224 km south of the railroad station of Yesil' of the Karagandinskaya railroad line and is intended to supply Kazakhstan, West Siberia and the South Ural with fireclay products in the future. Composition and properties of the sectional proofs were examined (Figs 1, 2 and 3) and the dependence of some clay properties was determined. Further, laboratory tests were caused concerning the composition and properties of prospecting proofs. Figures 4 and 5 show the heating curves of various type of clay. The ceramic

Card 1/2

properties of clay prospecting proofs are shown in table 4. Table 5 shows the composition of layers and the properties of dried unworked pieces, while tables 6 and 7 show the ceramic properties of the laboratory samples from typical layers. Conclusions: the layers rich in fireproof clay with a content between 20 and 25 % of binding of clay from the same deposit are regarded as the optimum layers for the manufacture of products from the type of clay of the Arkalykskoye deposit. For quality products made of these kinds of clay a burning at temperatures of 1400-1420°, or 1480-1500°, is required. These type of clay are recommended as a valuable raw material for the manufacture of fireclay and highly aluminous products. There are 7 figures, 7 tables, and 2 Soviet references.

ASSOCIATION: Ural'skoye otdeleniye Vsesoyuznogo instituta ogneuporov (Urals Department of the All-Union Institute for Refractories)

S/081/61/000/009/008/015
B101/B203

AUTHORS: Mamykin, P. S., Semkina, N. V.

TITLE: Sintering of Yeleninskiy kaolin as dependent on its roasting temperature and admixtures of the oxides MgO, CaO, Fe_2O_3, TiO_2, Na_2O, and K_2O

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1961, 319, abstract 9K228 (9K228) ("Tr. Vost. in-ta ogneuporov", 1959, vyp. I, 34 - 39)

TEXT: The authors studied the effect of the following oxides: Na_2O, K_2O, MgO, CaO, Fe_2O_3, and TiO_2 on the sintering process of elutriated kaolin from the Yeleninskoye deposit. The first two oxides were admixed in the form of sinters, the others as chemically pure oxides. The following quantities of admixtures were added referred to oxides: 0.5; 1.0; 1.5; and 2%. In the sintering process, part of the admixtures (Na_2O, K_2O, TiO_2) have an activating and intensifying effect on the process, the other admixtures (CaO, MgO) show an inhibitory effect. To

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Sintering of Yeleninskiy...

increase the degree of sintering it is necessary to diffuse the cation of the admixture in the crystal lattice thus forming intermediate compounds which destroy the lattice, or forming solid solutions which activate the lattice. [Abstracter's note: Complete translation.]

Card 2/2

15(2)

AUTHORS: Mamykin, P. S., D'yachkov, P. N. SOV/131-59-6-7/15

TITLE: The Sintering of Calciumoxide and the Production of Crucibles for Melting Platinum and Palladium (Spekaniye okisi kal'tsiya i izgotovleniye tigley dlya plavki platiny i palladiya)

PERIODICAL: Ogneupory, 1959, Nr 6, pp 267-272 (USSR)

ABSTRACT: The authors carried out this investigation because of the need for fire-proof calcium products. The basic raw material used was chalk, the composition of which is mentioned. Table 1 gives the qualities of the chalk specimens after being burned at a temperature interval of 1150 - 1740°. In the course of 33 - 40 days they decompose due to the hydration of the clinker. Further experiments were made with various admixtures. The best plastification liquids proved to be: a 4 - 5% shellac solution in anhydrous rectified alcohol; the 2 - 3% plexiglass solution in dichlorethane or trichlorethylene. In order to explain the influence of the grain composition on the qualities of the products of calciumoxide, rammed specimens were dried and burned for 30 minutes at a

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temperature of 1740°. Table 2 shows the grain composition of the test mass. Table 3 gives the properties of calciumoxide products. Furthermore the production and testing of burned crucibles is described. The crucibles for melting platinum and palladium were made of the masses I and VI and tested in a high frequency furnace GLE-61A with a performance of 60 kw, and in a vacuum furnace MPV-2. The figure shows an unburnt crucible which was rammed in two layers: calciumoxide inside and electro-melted magnesia outside. The rammed bricks were tested in the high-frequency furnace GLE-61A. Table 4 shows the impurity of platinum in the melting process. Conclusion: The full sintering of calciumoxide is reached at about 1740°. With an addition of TiO_2 sintering occurs at 1650°. Burnt and unburnt crucibles for melting technically pure platinum and palladium in high-frequency furnaces under normal conditions, as well as under vacuum conditions, can be produced from sintered calciumoxide with the binding agents of plexiglass solution in dichlorethane and shellac in alcohol. There are 1 figure, 4 tables, and 10 references, 6 of which are Soviet.

The Sintering of Calciumoxide and the Production of Crucibles for Melting Platinum and Palladium

SOV/131-59-6-7/15

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S. M. Kirova (Ural Polytechnic Institute imeni S. M. Kirov)

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15(2) SOV/131-59-12-1/15

AUTHORS: Mamykin, P. S., Syreyshchikov, Yu. D.

TITLE: Manufacture of Forsterite Products From Asbestos Scraps

PERIODICAL: Ogneupory, 1959, Nr 12, pp 529-538 (USSR)

ABSTRACT: In the present paper the experiment of replacing the process of briquetting asbestos scraps by granulation is described. Granulation and chemical composition of five kinds of scraps may be seen from tables 1 and 2. Figure 1 shows thermograms of asbestos scraps of Kurnakov. Asbestos scraps exhibit less refractoriness than serpentinites of Bedenskoye, Bazhenovskoye, and Belorechenskoye deposits. Table 3 indicates the refractoriness of scraps in dependence on magnesite powder addition. Further the granulation of furnace charges with magnesite addition is described and table 4 lists the chemical composition of utilized magnesites. Figure 2 shows granules obtained at dimensions of 7 to 15 mm. The granule- and briquette properties after burning are indicated in table 5. Samples were made from granulated and briquetted clinker the composition and main characteristics of which may be seen from table 6. Further the possibility of manufacturing Periklas-Forsterite products is

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Manufacture of Forsterite [illegible] from Asbestos Scraps

investigated the [illegible] of which are indicated in table 7. In the "Magnezit" [illegible] experimental set of Forsterite- and Periklas-Forsterite products were manufactured according to the briquetting method and described in detail. Their chemical composition and properties are shown by table 8 and their microstructure by figures 3 and 4. The Forsterite- and Periklas-Forsterite bricks were tested in the checkered brickwork of air- [illegible] regenerators of an open-hearth furnace of the Nizhne Tagil'skiy metallurgicheskiy kombinat (Nizhniy Tagil Metallurgical Kombinat) and it was found that their composition and properties changed only inconsiderably after use (Table 9). Only Forsterite bricks were subjected to destruction in a high degree. Petrographic analyses of these bricks were carried out by T. F. Raychenko; Figures 5 and 6 show their microstructure. Figures 7 and 8 show the microstructure of Forsterite bricks from asbestos scraps and unburned dunite. In conclusion the authors state that asbestos scraps may be used as raw material for the manufacture of Forsterite products with a porosity below 20%. By addition of 30% magnesite all properties of these products are improved. Granulating the finely ground charge may replace the briquetting of the charge without

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Manufacture of Forsterite Products From Asbestos Scraps

involving a reduction in quality. Thus the use of serpentinites, talcs and other similar rocks for the manufacture of Forsterite products is made possible. There are 10 figures, 9 tables, and 6 Soviet references.

ASSOCIATION: Vostochnyy institut ogneuporov (Eastern Institute of Refractories)

Card 3/3

MAMYKIN, P. S.; KAYBICHEVA, M. N.

Sintering additives for daub on a basis of metallurgical magnesite powders. Trudy Vost. inst. ogneup. no.2:132-142 '60. (MIRA 16:1)

(Refractory materials)